The magazine for hardcore Amiga enthusiasts!

AMIGA SHOPPER

YOUR DEFINITIVE AMIGA GUIDE
ISSUE 40 ● AUGUST 1994 ● £2.50
From the makers of AMIGA FORMAT



The Internet

Explore a whole new world of information through your Amiga

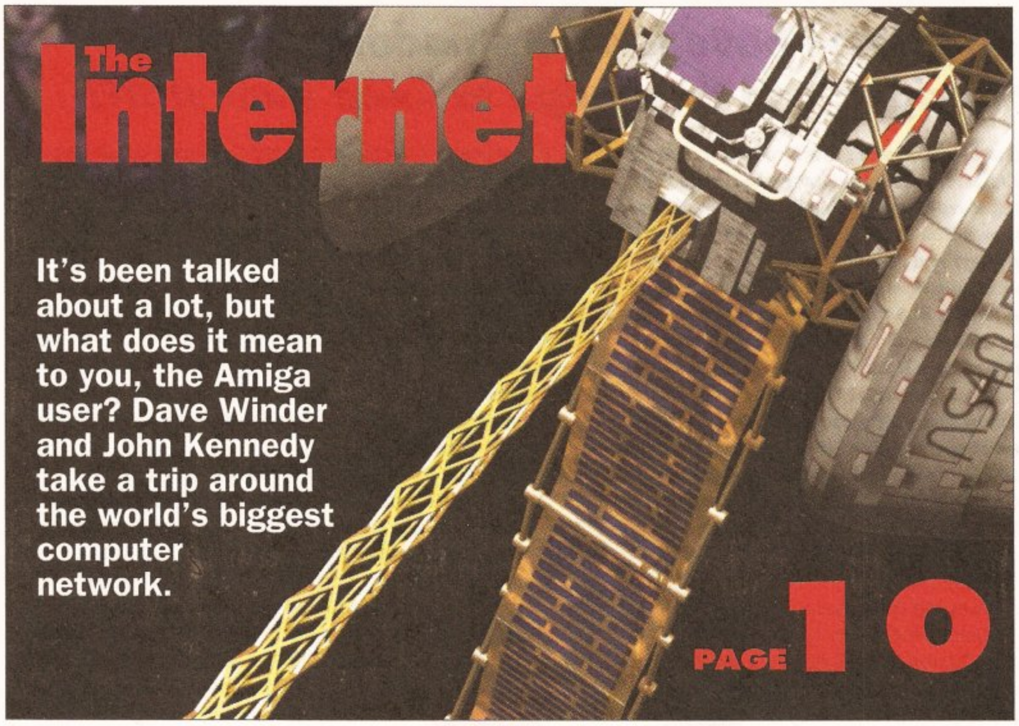
PS This cover image was created on an Amiga... find out how on page 39

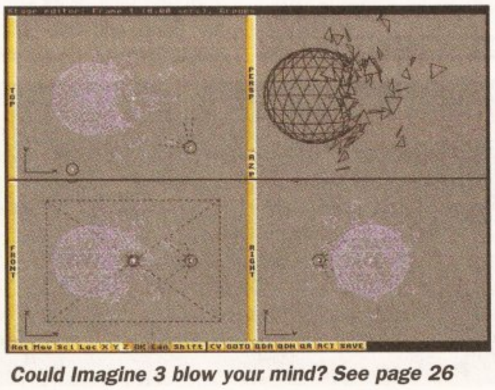
PLUS AMIGA ANSWERS solving your technical griefs. G-FORCE 040, PERSONAL ANIMATION RECORDER and VIDEO CREATOR reviewed plus C programming, AmigaDOS, and much more...

AMIGA SHOPPER
ISSUE 40 • AUGUST 1994

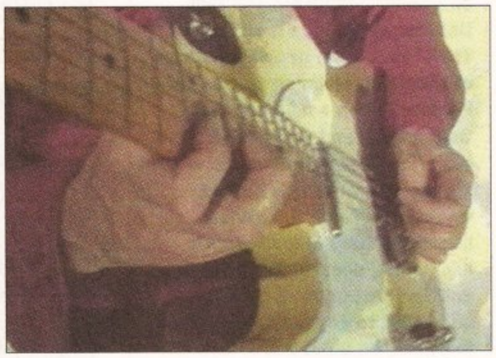
IN THIS ISSUE

FEATURES REVIEWS TUTORIALS REGULARS



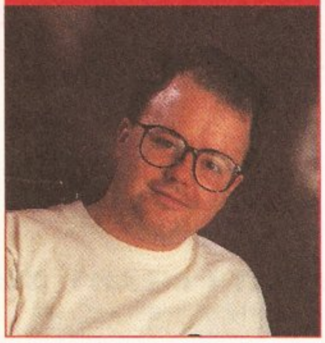


Could Imagine 3 blow your mind? See page 26



Keep on strumming with Par? Turn to page 28.

COMMENT



Richard B ponders over this month's Amiga events...

Rumours still abound, but there is still no word on who is going to buy Commodore. Although Commodore UK are still optimistic, there is no ink on a contract, not even any damp ink. What could this mean for Amiga users then?

The only thing that is certain is that nothing is certain. Until somebody finally makes public their decision to buy Commodore, it's very difficult to work out what is likely to happen. Although we believe that Samsung are still interested, there may well be other players on the field. Commodore have been granted an extension of the liquidation order, but there is still no confirmed buyer for the company.

So once again Amiga users are left in the dark. This isn't really anybody's fault, but how can people not be concerned when the company that produces the computer they probably have several thousand pounds invested in is left in a state of limbo? Hopefully somebody will shortly step in and end this confusion, otherwise even more Amiga users may be tempted away by the perceived delights of PCs and Apple Macs.

One of the people that we mentioned on our news story last month was a company called Giama, who allegedly made fruit machines. Since then, we have discovered that this was in fact a fake. It was produced by a person on Usenet calling himself Skip. Unfortunately, Skip is not alone. There have been several postings of this type, claiming to contain information on who is buying Commodore and what their intentions are. I'm completely flummoxed as to why people would want to do this. What benefit is there in deliberately misleading people? What to they gain by lying about a matter so important to so many people? Answers, on a postcard, to...

MORE STAFF LEAVE COMMODORE

More engineers have left Commodore. With no buyer in sight, can they hope to keep their staff?

The exodus of engineering staff from Commodore's US headquarters continues unabated, with the news that Dave Haynie has left to join multimedia software producers Scala. He joins Jeff Porter (who left Commodore in May) and Mike Sinz, who wrote a large portion of the Amiga's operating system. In fact, eight out of the nine people in Scala's Philadelphia office used to work for Commodore, and the other one used to work for GVP. Dave describes it as "Commodore in exile, East coast branch". The West coast branch is the California office of the San Mateo Software group, who designed the 3DO games console, which employs a large number of ex-Commodore software and hardware engineers.

Amiga Shopper managed to track down Dave Haynie at his new office, which is apparently about five minutes drive from the Commodore headquarters in West Chester, Pennsylvania. So why did Dave leave Commodore? "Because there was no point in staying at Commodore. There was nothing happening. They had a number of chip designs, but no money to put them into Silicon. I was trying to work around this, but some days I was just sitting around twiddling my thumbs."

Did the management make any effort to make him stay? "They made no effort to make anybody stay," says Dave," When I resigned, nobody attempted to make me stay, and none of the management attempted to dissuade me."

So where does this leave the AAA chipset? "They made no effort to keep anything going. When I was leaving, they were even packing away the test equipment. (in research terms) – they are really a year behind where they ought to be in order to be competitive."

Dave Haynie was responsible for designing several parts of the Amiga and was working on the long awaited AAA (Advanced Amiga Architecture) chipset up until he left. Although Dave would not comment on what he is now working on, *Amiga Shopper* believes that he is involved in a project to produce hardware for an interactive TV product. Scala have recently been discussing such a project with General Instruments.

Dave's future work for Scala will not be based on the Amiga, but he fully intends to remain involved in the Amiga scene and will continue to develop software such as his excellent *DiskSalv disk* repair and recovery program. He will also continue to read and get involved in the Usenet Amigas newsgroups.

So what does Dave think is likely to happen to Commodore? "I dunno. I hope somebody buys it. I would be nice to see the Amiga find a home where somebody treats it properly. Whether this future lies with Samsung or somebody else, I really don't know."

It's an extremely worrying sign that previously committed and enthusiastic people like Dave Haynie no longer want to work for Commodore. Losing members of the team who would design and build the next generation of Amigas means inevitable delays, and Commodore really can't afford to lose any more time. Most observers reckon that Commodore research and development is about a year behind where it ought to be in order to be competitive with the rapidly improving graphics and sound capabilities of Macs and PCs.

Colin Proudfoot (Joint MD of Commodore UK) believes that "whoever takes over Commodore will need to take over the Amiga expertise. It may take a little time for whoever it is to re-establish the design team, but I'm sure they could do it pretty quickly."

Unfortunately, in the fast moving world of computers, a delay of just a few months can be fatal, and Commodore are in danger of falling even further behind their competitors.



Multilingual wording

A new version of what the authors claim is the only truly multilingual word processor for the Amiga has been released.

Rashumon version 3 fully supports languages such as Hebrew and Farsi, and also fully supports 256 colour images. It can also import and export Postscript files. It also has one other unique feature in that it can export Scala Lingua script files. It's produced by an Israeli company called HarmonySoft, who can be contacted by Fax on 010 9723 315 967, or at the Internet address of harmony@ccsg.tau.ac.il.

PD Dominated

PD company Dominator One have been burgled, and one of the pieces of equipment stolen was their A4000 which held most of their PD disk collection. This means that they will not be able to fulfil any orders until they have got a new machine, so please don't order from them. Anybody who has already ordered will get a refund. They hope to be back up and working again within two months.

FAST to parliament

The Federation Against Software Theft (FAST) is taking its fight against software piracy to parliament in an attempt to gain greater powers. FAST are hoping to persuade the government that the current legislation is not effective in combating piracy in the SoHo (Small office Home office) environment. FAST estimate that the UK computer industry loses over £300 million every year through the illegal copying of software.

Troubled Waters

R Shamms Mortier checks how US developers feel about the big C.



The first thing to get straight is that 99 per cent of the developers that I have spoken with are more optimistic about the future of the Amiga than they have been in years. Very few have ever connected Commodore with the Amiga – those that did, have been so depressed that they quit the game a long time ago. That's not because Commodore didn't have some of the best engineers around; they did. Just look at how many they fired over the years. No, it's because Commodore have been out of touch – seriously out of touch. If I had a copper for every time I was put off by an arrogant and unkind remark made by a Commodore executive in response to a query, I would have enough funds at this point to own about a dozen fully equipped 4000s. And I am far from alone – I and my stateside comrades have begged and pleaded with big C for years to take marketing and the rabid Amiga community more seriously, but to no avail. The big Bahamian brass were unreachable, and apparently sat back and milked the company dry. I would be surprised to learn that anyone on the Board of Trustees was well acquainted enough with the system they parented to know their mouse from a hole in the ground.

So now liquidation is in full swing. The only anxiety that I am hearing about is that C will somehow hang on to a part of the Amiga technology's future. That would be a literal drag. We all hope that the new parent will realise that what all the community wants is someone to love, to respect, to praise. Advice to the new landlords? Push the damn system ahead where it should be, and you will be honoured among heroes. Remove the stain left by a company that sadly never understood the Amiga.

Still no buyer for Commodore

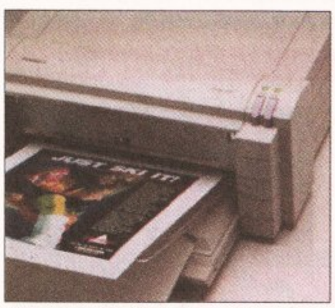
At the time of going to press, there was still no confirmation of a buyer for Commodore International, although there were indications that negotiations with Samsung were still going ahead. Several Samsung executives have visited the West Chester headquarters of Commodore and held discussions with Commodore managers.

According to one source, the Judge dealing with the liquidation order has given Commodore a three week extension, but with the condition that the assets of the company are sold to the highest bidder. There are also thought to be around seven companies bidding for the assets, although the identity of the other bidders is not known at the moment.

According to Colin Proudfoot, Joint MD of Commodore UK, "We are aware that an number of discussions are continuing. The liquidation is ongoing in the Bahamas, but we are continuing with business as usual".

One area that has concerned many Amiga owners is the maintenance of existing machines. Commodore UK claim that there are sufficient stocks of new machines to last until September, but what about machines needing repair or replacement parts? ICL, who handle the warranties on both Amiga 1200 and CD32 machines, have had no trouble in getting hold of components, and think it unlikely that there will be any in the near future. At the moment, machines are being repaired and maintained normally, and it seems unlikely that this situation will change in the near future.

Primera goes pro



The upgraded Primera printer.

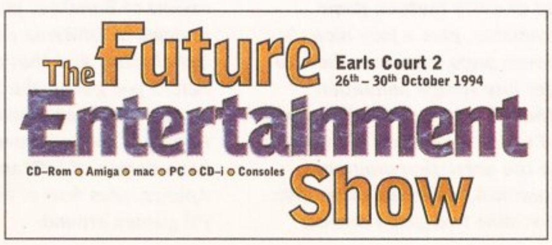
Bannerbridge Plc have announced that they will be marketing the PrimeraPro wax sublimation printer. The original Primera was somewhat revolutionary in that it brought a previously incredibly expensive form of printing down to a reasonable price. In fact, Jeff Walker liked it so much that he gave it a stonking 93% in the May issue.

This new version of the Primera is somewhat more expensive (with a RRP of £1,649), but the main improvement is a serious upgrade in terms of resolution. The Pro model can now print at a maximum resolution of 600 by 300 dpi, a doubling of the horizontal resolution. Although, using the Primera is not cheap (with a cost of around £2.50 per page), but it's a lot cheaper than other wax sublimation printers, which start at around £6,000. . Bannerbridge Plc are on ☎ 0268 419101.

Don't forget the show

Once again, the Future Entertainment Show will be landing in the vicinity of Earls Court 2 in late October. All manner of weird and wonderful things will be there, including a special CD area where you can try out the latest developments in CD technology, a Games arcade (Games? What are they? – Ed) and various other Amiga related technological type things. There will also be an Amiga theatre where you can ask awkward questions of various well-known Amiga people, including the staff of this magazine and our sister magazine *Amiga Format*.

As you would expect, there will also be a profusion of dealers displaying their goods, and the FES is always a good place to pick up a bargain. The FES runs from October 26th to October 30th. Tickets cost £6 in advance or £7 on the day. The ticket hotline is on ☎ 0369 4235.



Virtual Exhibitions

The first "Virtual Reality in Entertainment" conference will be held at the London Novotel from 13th to 15th September. This show will feature both the latest in Virtual Reality (VR) technology from a wide range of exhibitors and a series of executive briefings and workshops on the potential of VR, including recent breakthroughs in design and medical applications. Will there be any Amigas at the show? Why not ring Gerry Murray on ☎ 081 996 3632 to find out.

Remote Mediapoint

Activa International, programmers of the noted multimedia program *Mediapoint* have announced the release of a remote player. This will allow a remote machine to play MediaPoint scripts without having to run the full MediaPoint program. It will also allow scripts to be updated or new scripts sent over a network or mode link. Activa are on ☎ 071 3715241.

TV Transfer

If you need the sort of facilities that the Personal Animation Recorder (reviewed on page 20) can offer, but can't afford the price tag, have a word with Automatic Television. They specialise in transferring computer images to video tape, including direct transfers on to digital standard video tapes. Automatic Television are on ☎ 071 240 2073.

Pablo Picasso

Blittersoft are now selling Pablo, a PAL encoder for the Picasso graphics board. This gives Composite and S-Video outputs suitable for use with a Genlock or Video Recorder. Also included is a version of *Mainactor*, an animation and graphics package. The Pablo costs £149.95. Blittersoft are on ☎ 0908 220196.

A leads to Z

Bruce Smith Books have released *Workbench 3 A to Z*, which they claim covers "everyday usage of the Workbench in step by step terms." This is also accompanied by a series of tutorials on subjects such as setting up your Amiga and using commodities. The book should be available from any decent bookstore. Bruce Smith Books are on ☎ 0923 894355.

Project yourself

Projection TVs are beginning to creep into the home, and Citizen have launched a new model which could also be used with an Amiga. The Citizen 30PC LCD projector can project an image of up to 100 inches across, although you will need to be in a darkened room to see any images bigger than 50 inches. It can work from any composite video signal, so you could even project your favourite video on to the wall of your neighbours house. The 30PC is distributed by Visual Products on ☎ 0494 890601.

Critical Compuserve

The online service Compuserve has announced that its membership roster has just passed the two million mark with over 48,000 users based in the UK. They have also added reviews of UK books, films and plays to its range of services. These will include 500 word reviews of the top ten films currently showing in the UK and reviews of new releases. A database of British books in print has also been added, enabling you to search for books by subject, title or author. Further details from Compuserve on ☎ 0800 289378.

Make mine a mouse mat

The Data Business have launched a new range of "Fun" mouse mats, which include a variety of designs ranging from Boobs to gleaming male torsos. Other designs include a cute pig (which has won the heart of *Amiga Format* art editor Sue White) and a spilt cup of coffee. To further emphasise the, erm, "fun" aspect of the mats, they all avoid the traditional square shape in favour of various curves and curious bumps. The Data Business are on ☎ 0865 842224.

ReSourcing

Helios have announced the release of version 6 of ReSource, their popular disassembler. This new version now fully supports Memory Management and Floating Point unit code, as well as Workbench 3 specific code. The user interface has also been redesigned, with floating toolbars instead of menus now being used. Helios are on ☎ 0623 554 828.

Don't be just a player

Middlesex University are the first to offer a degree course in "the Design and Production of Interactive Games". This one year Master of Arts course will start in September of this year, and a three year Bachelor of Arts course is planned to start in 1995. Both courses will cover design, programming, music, and the business side of games writing and publishing.

Publishers such as Domark are involved in the course, and will be providing both hardware and work experience. According to programme leader Julian Sanderson, there are still places available on the MA course.

Applicants should have either a prior degree, or be over 25 and have a great deal of relevant experience in producing games or associated activities such as music, animation or other types of programming .

Contact Maureen Burkle on ☎ 081 362 5159 for further details of both courses.

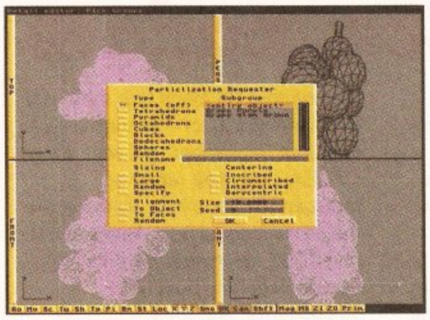
Big Business in the Counting House

Business software is an area in which the Amiga has always been sadly lacking, and this is especially true of accounting software. Fortunately, Applied Research Kernel are now coming to the rescue with *Counting House*, a combined accounts and business management package. This can cope with such mundane tasks as audit trails, balance sheets and profit and loss accounts. Address labels and mail merges can also be done from within the program, and *Superbase 4* users can also write their own routines for use within the program.

The program requires 2Mb of RAM and a hard disk. The price is £99.95. Further details from Applied Research Kernel on ☎ 0983 551 496.

Imagine Upgrades

If the first look at *Imagine 3* (starting on page 26) has wet your appetite for getting into some serious ray tracing, you might like to know that Meridian distribution are offering an upgrade from either previous versions of *Imagine* or other ray tracing programs for only £93.45. They are also selling *Essence* volume 3 (which includes volumes 1, 2 and Forge, a texture manipulation program) for the special offer price of £79.95



Imagine.3 has a wide range of new features

Don't forget that if you have the *Amiga Format Imagine 2* coverdisk (from issue 53, December 1993), you can also upgrade to *Imagine 3* from Future publishing for only £95. You will need the form that was printed in that issue.

Print Cheaper

Silica have dropped the price of the Ricoh 1200 Laser printer to under £500. 2Mb of memory is installed on the printer, but this can be expanded to 4Mb. This 400dpi six page per minute printer can emulate the HP Laserjet III or an IBM ProPrinter, but it also comes with a specially written Amiga printer driver.

Silica have also just started selling the Amitek modulator, which plugs straight into the RGB socket, and gives an RF signal suitable for use on a TV and a composite signal for a monitor such as the 1084S. The Amitek Modulator costs £34 from Silica on ☎ 081 309 1111

Workbench 3.1 Available

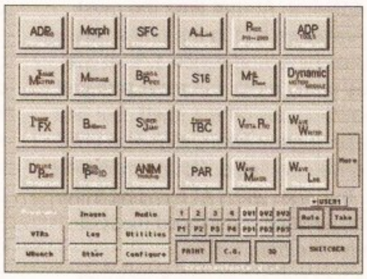
In the absence of any official announcement from Commodore UK, Amiga Dealers Blittersoft are now selling Kickstart and Workbench 3.1 upgrade kits. These include the Kickstart chips, Workbench disks and English manuals. Two versions are available: one for 16-bit machines such as the A500, A1500 and A2000, and another version for the A3000 and A4000. Prices are £92.95 and £102.95 respectively.

Workbench 3.1 offers a variety of new features including direct support for CD-ROM drives and the ability to have 256 colour screens on non-AGA systems (as long as a 24-bit graphics card such as a Picasso II is fitted). Commodore hope that the fact that this new version of Workbench can be used on any Amiga (with 1Mb or more) will help to cut down the confusion as to which version of Workbench to use and encourage users to upgrade their machines. Blittersoft are on ☎ 0908 220196.

NEW OPERATING SYSTEM FOR TOASTER USERS

If you have a Toaster system you'll want to check out DevWare's new *CroutonTools*. This software is one of the best utilities that Toaster users can get. If you need help with the install process, you'll have to call their technical support number for a new install disk and code. *Crouton Tools* is nothing less than an operating system for the NewTek Video Toaster, but it allows you to do much more than you'd expect from that vantage point. Just to give you a basic idea of what can be done from the *CroutonTools* interface, we'll peruse its "Section Selectors." These are main interface buttons that direct you to other points in an almost limitless hierarchy. There are nine main choices.

"Configure"is a selection that allows you to tell the software where other programs are located that you might want to run from the interface (*ImageFX, ADPro, DPaint*, etc.). It's an easy point and click process. "Programs" allows you to actually access any of the choices that were targeted in the Configure section. Again. Access is made by a very simple to understand and use graphic interface with appropriate buttons. "Images" is a selection that contains some very brainy screens. From here, you can add image processing to any DV1, DV2, or ToasterPaint image. There are separate screens for the three best Amiga image processing packages: *ImageMasterRT, ImageFX*, and *ADPro* (as well as *DPaint* and *Brilliance*). Every nuance of these programs can be controlled from this interface. Another choice is "Audio". From here, you can control the Sunrize' *Studio 16, Bars & Pipes Pro, SuperJam!*, and other music wares. "VTR" controls the Single Frame Controller that's connected thru the serial or parallel ports, with all the appropriate VTR buttons. "Logger"



Crouton Tools "Program" interface.

allows the Toaster user to log tape positions where specific data has been recorded for further editing tasks later on. The button marked "Utility" allows you to copy, move, rename, and delete any files on the system. Though this software works as expected, giving Toaster users a much needed central interface to target any application from.

Crouton Tools classifies itself as a "Video Operating System", and excites the DevWare president, Scott Pinkuf, into animated descriptions of the product. I had a long conversation with him recently regarding the direction DevWare plans to take the package. He told me that there would be a new 1.1 version out in June, followed by a 2.0 upgrade in the Fall. DevWare is becoming the fattest Toaster and Toaster utilities marketing service in the US, and supports all of the NewTek as well as third party wares. Central to the release of *Crouton Tools* is a modular approach, allowing them to market add-ons in the future. One of these will be the "Canvass Module", a super batch processor for the main program, allowing you to do all of those neat animations on a list of frames that the best Amiga image processors can provide. Other modules in the works are StoryBoard and others. All of this is meant to make the Toaster a full video solution. Support for the PAR animation controller should arrive with version 2.0, while Sanyo GVRS-950 single frame recording is also a planned add-on. MAC "Quicktime" movie translation is also in the works. With eventual Toaster support for PAL users projected in about a year, *Crouton Tools* looks to be an international hit.

DevWare ☎ 0101 619 679 2825

A PAL TOASTER FROM NEWTEK?

There is a statement on the 3.1 software upgrades that stipulates that users of the software *must* run it on the original NewTek dongle, the Toaster board. European resellers of the software upgrade seem to be bundling it with the *LightRave* product, which is against the law as far as NewTek is concerned. They are doing everything in their power to try to put a stop to it, including (so I'm told) planned legal action. I was also told that NewTek has no plans to develop a PAL Toaster at this time, but I don't believe it a bit (and you shouldn't either). I have confirmed information from another highly respected industry source that the PAL Toaster development is already well underway, with planned release of a PAL Toaster package by next year. Let's face it. NewTek is not going to pass up the fat world market. Also underway is a separate Toaster box that will address any and all platforms in addition to the Amiga, and may do so through ARexx!

NewTek ☎ 0101 800 843 8934

DPAINT BUG EXTERMINATED

First off, if you have *DPaint AGA 4.6*, be aware that you have a comfortable bug nested in the software. To prod this critter into wakefulness, try and load a font directory from somewhere else besides "Fonts". Surprise! It won't work. Unlike some other paint programs that have no way to allow this, loading alternate font directories has always been a *DPaint* strongpoint – but not in version 4.6. To fix it, EA will send you a free 4.6.1 – then it'll work fine.

On another issue, *DPaint* owners are going to be treated (so I have been apprised) to a very major upgrade in version 5 (some time in late summer or fall). The techies won't tell me much at the moment, but I understand that Digital Creations, the makers of *DPaint's* main competition – *Brilliance* – lost a couple of programmers to Electronic Arts a while ago. These folks just happened to be some of the same designers working on *Brilliance* before its *2.0* release. Now what do you suppose they're up to. By the way, did you know that Digital Creations developed software that EA went to market with at one time? But that was then, and this is now. And...

Speaking about paint packages – are you aware that Innovision Technology, the creators of *Montage* and other superlative Amiga animation and graphics software, has assumed the task of creating a new paint package for NewTek's Toaster. The present offering, *ToasterPaint*, is about twelve centuries behind the times, and is the poorest part of an otherwise spectacular bundle. There have been rumours for awhile that NewTek was planning to release a paint package that would blow every other 24-bit one out of the water (on any platform), and now those rumours have been confirmed. Exactly how good it is will have to be determined on more than rumour alone, but on the final product. The name of the new software (targeted right now for late June release) is *Alpha Paint*. Price is as yet unknown, but from my conversations with Innovision, it will not support anything but the Toaster at this time.

Electronic Arts ☎ 0753 549 442.
Innovision Technology
☎ 0101 510 638 0800.

Happening Hollywood!

More Toaster news. All of those fancy 3D wipes that came with the Toaster Switcher 3.0 software are boring in comparison to what is contained in the *Hollywood FX* package from SYNERGY International. They send out a sample video with the promo if you're interested, showing the effects in action. All effects are rendered as A4000 Toaster playable HAM-8 anims or as single frames. This is it folks – all of the 3D wraps that you've seen on CNN and other venues. The price is $499, and you'll need a Toaster and 10Mb or RAM or more to run it. Of course, new FX libraries are already in the works, as well as a special developer's kit that allows you to design and market your own! Just contact SYNERGY International for more details (☎ 0101 801 532 0604).

Awesome Cyberstorm Series

The number and quality of the proliferation of Amiga acceleration and expanded memory boards is becoming almost overwhelming. Now there is a trio of such from a company called the Advanced Systems and Software International Group out of Dallas, Texas. AS&SIG has already made a reputation for itself with the FastLane Z3 and Blizzard boards, and now adds more muscle to its line. The Blizzard 1230-II series adds acceleration/expansion possibilities to the Amiga 1200 series ($395 and $595). The Blizzard 4030 does the same for the Amiga 4000/030 (no price yet available). The spanking new Cyberstorm series looks to be the most awesome, and addresses the A4000 only. It comes in three flavours: an 040/25, and 040/40, and a whopping 060/50 ($695, $1495, and $1995). The 060, obviously, will be available as soon as the 68060 chips are released. Cyberstorm is modular, and is configured with three basic parts at the start, including a Carrier Board, a CPU module, and a Memory board. Later on you can add a Communications Module (SCSI-II interface, Ethernet Controller, High Speed Serial Ports) and a Cache Module (second level caching for even greater performance increases).

Here today, gone...

There's a lot happening in the Amiga world at present and here at Amiga Shopper we are having our fair share of changes too. It's time to say goodbye and hello to...

Rambling Ramshaw



"When I started here it was different. At that time the most powerful computer in the office was an A1500 running Workbench 1.3... The Amiga range as it stands today is a good solid one, offering far more power than we ever dreamt of three years ago."

It's goodbye from me. This, sadly, will be my last issue of *Amiga Shopper*. I've been working on the magazine ever since its launch nearly three and a half years ago, and I've been proud to edit it for the past 17 months, but now it's time for me to go. [Please don't go – the staff]. Oh, but I must. [Alright, shut the door on your way out – the staff].

As you'll have gathered from the above, it's not as if I'm leaving you all without a good man to carry on the sterling work. I'm sure Richard, a man of integrity, boundless energy and wide Amiga experience (I'm touched! – Ed), will strive to make more improvements to the magazine and further increase its value.

Not that you've heard the last from me. Oh no. I intend to keep my hand in, writing reviews, articles and so forth for this glorious tome we call *Amiga Shopper*. I'm also hoping to be able to devote more of my time to just having fun with my Amiga, particularly in the area of programming. So if I come up with any marvellous discoveries, you can rest assured that I'll be passing them on to you (one has to make a living somehow).

'Course, when I started here it were all fields... well, not really, but it was certainly different. At that time the most powerful Amiga we had in the office was an A1500 running Workbench 1.3. At that time it was pretty much the most powerful Amiga you could buy off the shelf. Our first issue's main feature was a round-up of all the hard drives available. Not many owned one then, but after years of extolling their benefits we've finally convinced most of you to go for the hard option.

It was two and a half years ago that Commodore UK committed themselves to opening a nationwide network of 12 multimedia centres over the following three years. Well, after two changes of leadership (from Steve Franklin to Kelly Sumner to David Pleasance) they've finally managed to open just two – one in Wales and one in London – not, thank God, stocked with CDTVs as originally intended. I don't fancy their chances of getting another ten going in the next six months, though.

Mind you, it's anyone's guess what they will be doing in the next six months. I'm told, as a write this, that an announcement about Commodore's buyer is expected in the next few days. It's about time. Consumer confidence in Commodore has really dropped – in one retail outlet I spoke to only one Amiga had been sold since the liquidation became public knowledge. People want to wait and see what's going to happen, but if something doesn't happen soon they're liable to go out and buy a computer made by a more stable manufacturer.

The Amiga range as it stands – the CD32, the A1200 and the A4000 – is a good solid one, offering far more power than we dreamt of three years ago. Nevertheless, it needs improving, and the prices, especially of the A4000 models, need to come down. But quite what the all-new, Phoenix-like Commodore will do is anyone's guess. I can tell you about the rumour that they're hiring a certain ex-editor of an Amiga magazine to advise on a top-secret Ultra Super Amiga 8000 that will simultaneously form the computing core of a manned mission to Mars financed by an international consortium including Samsung, Sony, MI5, Rupert Murdoch, AT&T, the CIA and Amstrad, and that will be on sale in Dixons for around £299 this time next year. I can tell you that it's not true. Take it easy! ***Cliff***

Boisterous Baguley

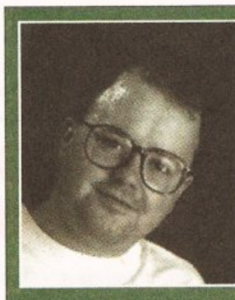
And it's hello from me. As you may have noticed, things are changing around here. Cliff Ramshaw (editor for the past seventeen months) has decide to leave the magazine and the powers that be (Steve Carey – our beloved publisher) have decided that I'm the one to take over *Amiga Shopper*.

For those of you who haven't bumped into me before, I used to be the Staff Writer (translation: general dogsbody, tea person and anything-else-that-needs-doing person) on *Amiga Format*, our sister magazine. I did this for just over a year and prior to that I had a wide range of jobs, ranging from PC telephone support to working as a freelance photographer. If you're interested (which I doubt) I've also got a BA (Hons) in photography. Quite how this lot makes me qualified to be an editor I don't know, but there you go.

It's certainly an interesting time to be made the Editor of Britain's biggest selling serious Amiga magazine, but you shouldn't worry about this magazine changing. I intend to keep the same mix of reviews, features and tutorials, although you will see some changes in the way these are put together. One thing I really want to do is to find out what *you* think of the magazine. Do you think it could be changed for the better? Do you want to see more or less of any particular aspect of Amiga use? Please write to me with your thoughts, or contact us via the E-Mail addresses on page 98.

This may be old news to you lot, but I was recently sent a disk by a reader, containing a pirated copy of *Brilliance*. There is nothing particularly surprising about this as, regrettably, piracy on the Amiga is very widespread, as anybody who read our feature on computer crime in our September issue will know. Pirated programs are "cracked" (which means that any copy protection is removed) and within a couple of days it will be distributed around the world by pirates. The disturbing thing about the cracked copy of *Brilliance* is a text file which was on the disk. This was by somebody calling himself "Entity" who boasted about how difficult *Brilliance* was to crack, and how the code which detected the presence of the dongle was buried deep within the program. To quote from the file: "They went to extreme lengths to make sure that nobody would crack it... Of course, they didn't know about me."

As if this isn't bad enough, Entity then goes on to say that he thinks that *Brilliance* is the best Amiga paint package available, and that everybody reading this should go out and buy it. Coming from somebody who has just provided the means for people to use the program without buying it, I think this is rather ironic. The simple truth of the matter is that thieves like Entity and his "colleagues" are hurting the Amiga by depriving companies such as Digital Creations (the publishers of *Brilliance*) of money from the sales of their programs. If they don't make money on these programs, they won't be able to afford to develop new ones. There's no doubting that Entity is a good programmer, but why is he wasting his obvious talents on stealing other people's work? Why isn't he writing his own paint programs? If this organised network of pirates continues, they will eventually have nothing left to steal. But will they care? I doubt it! ***Rich***



"It's an interesting time to be made the editor of Britain's biggest selling serious Amiga magazine, but don't worry about this mag changing. I intend to keep the same mix of reviews, features and tutorials, with some changes in how they are put together."

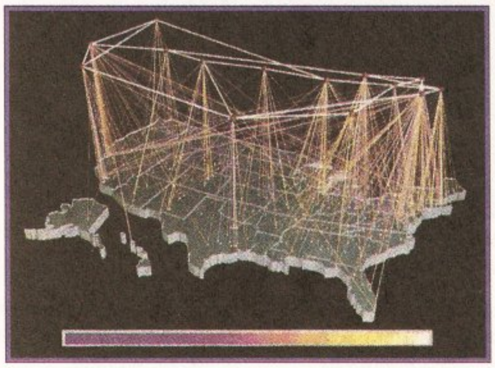


The Internet

The Author William Gibson suggested the idea of Cyberspace, a network of computer users linked together across the world. Now, this idea is slowly being made real (in a virtual sense) by the Internet, the biggest computer network the world has ever seen. Come with Dave Winder on a voyage into the future...

More than 20 million people have access to the Internet, using more than one million connected computers, and it has been estimated that they are being joined by somewhere in the region of one million people every month. Awesome, isn't it! The Internet is the world's biggest computer network, more precisely it is a network of computer networks. It is part of the Information Superhighway that is revolutionising the way that information is dispersed, literally at your fingertips are Gigabytes of data just waiting for you to pull them out of Cyberspace and on to your Amiga.

And we're not talking boring anorak-fodder here either, although that's out there if you want it; we are talking about electronic magazines, fine art, home shopping by modem, chatting in real time with people on the other side of the world, playing multi-user games, learning to play the guitar, weather reports, recipes for brewing beer, getting the latest public domain software for your Amiga, finding out how to make an origami earwig. And let's not forget what is possibly the greatest technological advance of the 20th Century – Electronic Mail. Once you are connected to the Internet you can send Email across the world, in an instant. Whatever you want is waiting for you on the Net, and I'll tell you how to go about finding it and using it!



A graphical interpretation of the Internet, as downloaded from ftp.eff.org.

THE HISTORY OF IT ALL

The Internet started life way back in 1969 thanks to a US defence department by the name of the Defence Advanced Research Projects Agency, or DARPA for short, and was primarily for military research purposes. There were only four computers, or nodes, on the network at this early stage, and it became known as the DARPANET which was soon shortened to ARPANET. The computers would exchange information very quickly, and so the scientists of ARPA could share computer facilities and research material over long distances. By 1972 ARPANET had grown to 37 nodes, and its users weren't just exchanging military research data anymore – they were talking to each other about all sorts of things, they were gossiping, they had private Email accounts. As the network continued to grow, and its use became ever more diverse and less centrally controlled (or indeed controllable) the need to separate the military research side became apparent, and in 1983 a separate network called MILNET was formed. In 1984 the National Science Foundation, another US Government Agency, created five supercomputer centres whose resources were to be available to any educational facility that wanted access. The five centres needed to be connected so the resources could be shared, and the clients needed to be able to access them. At first the NSF hoped to use ARPANET, but this plan was scuppered mainly by red tape. Thus the NSFNET was born. The network operated by schools and universities connecting to each other, on a regional basis, with at least one site in the region connected to the supercomputer centre. This allowed all sites to have access to the centre, and each other, by forwarding information from site to site.

OUT OF CONTROL

Other Government departments and agencies soon joined in, with NASA, health departments, energy departments, all having sites on to the ever growing Net and all contributing towards what is now known as the Internet.

The really amazing thing is that nobody is actually in control of the Internet. Admittedly the US Government has been instrumental in the development of the net, what with ARPANET and NSFNET. The NSF may appear to have some degree of control, but this is only true up to a very limited point as it can have no control over the networks connected along the way. Perhaps the truth is that the Internet is a kind of anarchic democracy, where the lack of control is the best form of control?

The Internet shouldn't be confused with other networks such as Fidonet. Whilst they may appear superficially the same, they really are very different beasts. If the Internet is a network of computer networks, then Fidonet is just a network, albeit a very large one indeed. Fidonet comprises of thousands of bulletin board systems (BBSs) worldwide which are linked together to form a giant network. Many Fidonet BBSs now have Internet links, mainly restricted to Email and Usenet news, as their users are demanding this service more and more.

WHAT MAKES THE NET WORK

So we now know that the Internet is a network of sites, be they military, educational, commercial, scientific, or whatever. Each site is, in fact, a network itself, be it a Local Area Network (LAN) or a Wide Area Network (WAN). All the sites are connected to the Internet, and so to each other, using anything from standard phone lines, dedicated leased lines, even satellite and microwave links are used. You will have guessed by now that these sites are not all comprised of Amigas, in fact they encompass every conceivable platform from PCs and Macs through to the big boys of supercomputing. You will also be wondering how the heck they can all talk to each other in that case, after all it can be hell itself just transferring

> **"Gigabytes of data is at your fingertips... electronic magazines, fine art, home shopping, chatting in real time, multi-user games, weather reports... you name it."**

THE RIGHT ROUTE

TCP/IP is the Internet Protocol Suite. The networks that form the Internet are connected by computers known as routers. These routers need to decide how best to transmit data, or packets, across different parts of the network. The Internet Protocol (IP) takes care of packet addressing, so that a router knows where to send data when it receives it. These packets are small, with a limit of 1,500 characters. Because of this restriction, and the fact that packets can get lost or damaged "in the post" as it were, another layer in the network is required. This is where the Transmission Control Protocol (TCP) comes into play by breaking down the packets into smaller chunks which are numbered in sequence and then placed inside an addressed "envelope." The TCP envelope is then placed inside an IP envelope for transfer over the network. At its destination another TCP application will remove the contents of the IP envelope and ensure they are re-assembled in the correct sequence.

MAKING THE RIGHT CONNECTION

In order to actually get on the Net you will need to use a "ServiceProvider". This means different things to different people – it could be that you are a student using your university account, you may have access through your place of work, or maybe your local BBS gives you some sort of Internet access. A Service Provider actually provides the physical links to the Internet that you need to get connected. If you don't have access to the Internet via school or work, then you could always lease a dedicated line, and set up a routing computer, and become a part of the Net the expensive way, but why pay out big bucks when someone has already invested in the necessary machinery? There are now a number of companies in the UK offering dedicated Internet access at reasonable rates, you pay a fee and get on to the Net using a normal telephone line by way of SLIP or PPP software. The Service Provider you choose should make setting up SLIP or PPP as easy as possible for the user, and will generally offer good technical support should you get in trouble. If you don't like the idea of having to set up and configure the software, then you could opt for an online system which gives Internet access as part of its service. Systems such as Cix have Internet gateways already set up, which are very easy to use, but you tend to pay extra for this ease of use as you are also paying for much more than "just" Internet access.

SERVICE PROVIDERS

Name: CIX
Phone: 081 390 8446
Email: cixadmin@cix.compulink.co.uk
Charges: Registration fee £25.00
£3.20 per hour (Mon-Fri 8.00am to 5.00pm)
£2.40 per hour (all other times)

Name: Demon Internet Ltd
Contact: Phone 081 349 0063
Email: internet@demon.net
Charges: Registration fee £12.00
£10.00 per month

Name: The Direct Connection
Contact: Phone 081 317 0100
Email: helpdesk@dircon.co.uk
Charges: Registration 7.50
Standard account £10.00 per month
Enhanced account £20.00 per month

Name: EUnet (GB)
Contact: Phone 0227 475497
Charges: From £95.00 per quarter

Name: GreenNet
Contact: Phone 071 608 3040
Email: support@gn.apc.org
Charges: Registration fee £15.00 Monthly charge of £5.00 plus 4p per minute

Name: Pipex Ltd
Contact: Phone 0223 250120
Email: pipex@pipex.net
Charges: Contact Pipex for details, .

Name: Genesis Project Limited
Contact: IPhone. 0232 231622,
Email: sales@gpl.com
Charges: Registration fee £12.00
£10.00 per month

JARGON BUSTING

Cyberspace – the "virtual world" that exists inside computer networks.

Information Superhighway – a term used to describe the the process by which services such as the Internet, video on demand, home shopping are supplied.Please note that anybody using this rather naff phrase in *Amiga Shopper* will be shot.

LAN – a Local Area Network is a data network that serves a small geographical area, such as a single company or office.

Net – another word for the Internet.

NODE – a computer attached to a network.

PPP – Point to Point Protocol allows a computer to use TCP/IP with standard telephone lines.

SLIP – Serial Line IP is a protocol that allows a computer to use the Internet Protocols by means of a standard telephone line.

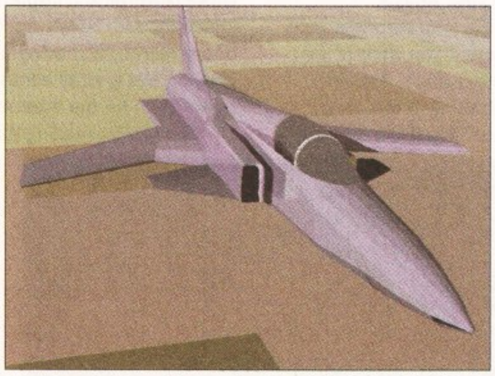
Teapot – something that Wavey Davey is totally out of most of the time.

WAN – a Wide Area Network is a data network that serves a large geographical area.

files from an Amiga to a PC sometimes!

The answer is that there are standard protocols used to enable communication on the Internet, and any computers that want to be understood have to use those protocols. The Internet uses Transmission Control Protocol/Internet Protocol, hereafter forever referred to as TCP/IP (or my fingers will fall off from excessive typing). TCP/IP was developed by DARPA and is an open protocol that is implemented on just about every computer platform available.

ARCHIE helps you to locate files stored in public access sites on the Net. It gets its name from the word archive, and is very clever indeed. The ARCHIE database contains information on over 1,000 public access sites, or 1.5 million files, or in excess of 100 Gigabytes of data! Imagine trying to locate something amongst that lot on your own, the phrase "blimey o'reilly on a bicycle" comes to mind. There is an ARCHIE database at archie.doc.ic.ac.uk which you can query with the whole or part of a filename you are interested in. ARCHIE will then return a list of sites where you can FTP the file from.



Archie might not be as fast as this baby, but it tells you that you can find x29.gif at ftp.nau.edu.

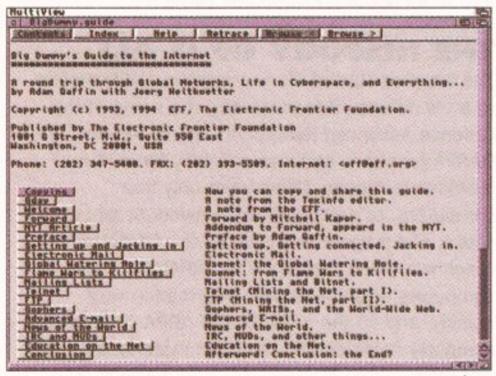
Wide Area Information Servers (WAIS) are similar to ARCHIE in function, but rather than locate a file by name, WAIS helps you locate a file by the information contained within it. You use WAIS to search for a string or strings of text, and it will return a list of what it considers to be the nearest matches. The easiest method of accessing WAIS is by using another Internet tool, the Gopher.

Gopher is a wonderful application that eases your navigation through Internet resources by using a simple menu structure. You can access other computers, search for information, link to Usenet news, download documents – all from a simple menu without even realising you are travelling halfway across the world and back again. Gopher is a very easy tool to use, and makes exploring the Net great fun. If you want to find a document about absolutely any subject, a Gopher out there will dig down and find it for you. A similar tool is called Veronica, and she keeps an index of Gopher items. By making a keyword search of the titles held on Veronica, you get presented with a Gopher-like menu of information which can be accessed directly from it. A Veronica search actually searches the menus of hundreds of Gophers, and is a pretty useful young lady! You can access Veronica from most Gopher menus. If you want to try a Gopher, a couple of good ones can be found at gopher.well.sf.ca.us and wiretap.spies.com

TALKING NETWORKS

If you feel like talking in real time, to real people, in real places, then Internet Relay Chat might be just for you. Using IRC, as it is known, you could hold a real time conversation with a group of people situated in the far corners of the world. It is simple to use, and some very interesting conversations can be found. Think of it as a sort of CB Radio on the Internet, but with thousands of channels, and you won't be far wrong. Try telnetting to rachel.ibmpcug.co.uk 9999 to sample the delights of IRC for yourself.

If it's not real time chat you want, but rather debate, discussion, argument, information, or even totally teapot wibble, then you should take a look at Usenet. Usenet, simply, is a worldwide



Need help finding your way around? Check out the Dummy's guide, available from many FTP sites.

BEGINNERS START HERE

What is the Internet?
The Internet is a network of computer networks, providing an incredible resource of information.

What does it do?
It connects computer networks around the globe, and offers you the chance to connect to those networks and make use of the information stored there.

How do I use it?
Well, you simply need a modem and some terminal software for your Amiga. You will also need an Internet Service Provider to supply you with the actual link on to the Internet.

Isn't that expensive?
No, not really. A modem will cost you anything from about £100 these days. You can get an Internet connection from as little as £10 per month (plus the cost of your telephone bill) for a full service.

What's in it for me?
The Internet is many different things to many people. You could use it as a library in your own home, allowing you to search through vast amounts of electronic books for the references you want. You could use it to talk to people on the other side of the world. You could use it to get the latest Public Domain software, as it is released. You could use it to save money by connecting to computers overseas from a local phone call.

Won't people laugh at me if I don't know what I am doing?
No, 'Netters' are an extremely friendly bunch. We all had to start somewhere and, with very few exceptions, people will be only *too* happy to share their vast experiences and expertise with you.

THE ULTIMATE INTERNET INTRODUCTION?

As luck would have it, there is a new book just published which covers the Internet in some depth. Written by *Amiga Shopper's* very own Davey Winder, who also broadcasts on TV and Radio about the Internet, this book is a very good introduction and guide to the Internet. Aimed at Amiga users, and written very much from a hands-on perspective, the book provides tutorials on the major Internet applications such as FTP, Archie, Gopher, and IRC. Usenet, Email, and Mailing Lists get covered in detail too. Not only that, but there are also really useful directories showing you exactly where all the interesting Internet discoveries are hidden, and what to expect when you get there. Details of Service Providers are not excluded, nor is a sturdy technical reference for those who need to know a bit more than the rest. A comprehensive glossary combined with both acronym and smiley dictionaries help to unravel the secrets of Net terminology, and there are guides to a number of online services for good measure.

This, as yet unnamed, Amiga Comms book is definitely the ultimate Internet introduction, and to make this an irresistible buy, there are a number of special offers to purchasers including membership deals for CompuServe, CIX, The Direct Connection, and On-Line as well as discounts on modems. So if you want to get connected, get this book.

Title:
As yet unnamed
Author:
Dave Winder
Published by:
Future Publishing
☎ 0225 822 511
Price:
£19.95



Teleworking could well be the way of the future. This picture was downloaded from ftp.eff.org.

conference system; an international on-line community with topics ranging from government agencies to universities to home computers. It comprises well over 2,000 "newsgroups," each devoted to a different area of interest, and each newsgroup comprising of messages related to that subject. Anyone can post to a Usenet newsgroup, and your Service Provider will be able to point you in the direction of the best newsreader software for your setup. A newsreader allows you to join the groups that interest you, read and comment to them, thread the articles so they are more manageable, and even put people you don't like into something called a "killfile" which prevents you ever having to read anything from them again (shame my TV can't do that for politicians).

Newsgroups are categorised by their subject matter – the main hierarchy consists of the following eight categories:

alt	Humourous and controversial groups
comp	Computer related
misc	Topics that don't fit elsewhere
news	News announcements
rec	Hobbies and recreational
sci	Scientific
soc	Sociology
talk	Chatter and debate

GETTING HELP

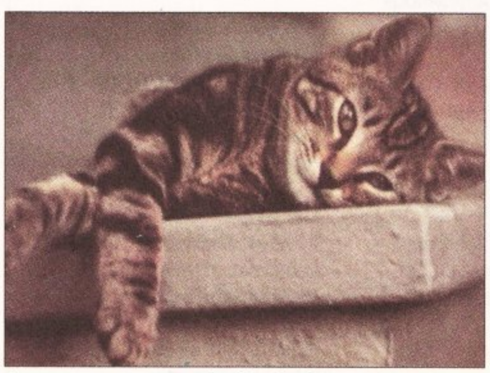
If you want to know more about Internet services and tools, fear not as help is quite literally at hand. When using such tools as FTP, Archie, Telnet, and IRC, you can always get immediate on-line help with commands by typing either "help" or "?". There are also many helpful files and documents available from the Net itself, and you may find these ones particularly useful:

Both the *Hitchhiker's Guide to the Internet* and *Zen* and the *Art of the Internet* are good general purpose guides, and are available via Gopher from yaleinfo.yale.edu

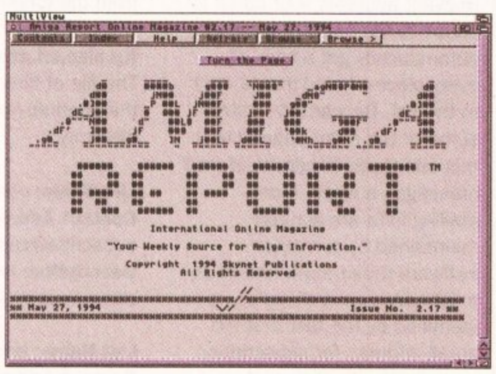
The Big Dummy's Guide to the Internet is actually available in AmigaGuide format (the archive has a plain text version as well) by anonymous FTP from wuarchive.wustl.edu

The Big Dummy's Guide to the Internet is not just for Big Dummies; I downloaded my copy in AmigaGuide format from wuarchive.wustl.edu.

Finally, if you get really stuck why not contact me either by writing in to *Amiga Answers* here at *Amiga Shopper*, or by sending me Email to either dwindera@cix.compulink.co.uk or 74431.1365@compuserve.com



Once you are connected to the Internet, you never know what will pop up on your screen.



Amiga Report is just one of the many electronic magazines that you can get from the Internet.

INTERNET ADDRESSES

An Internet address is very similar to your home address. For a letter to reach me by post the sender needs to know my name, house number, street, county and country. Things are no different in Cyberspace. Taking my Internet address of dwindera@cix.compulink.co.uk as an example, "dwindera" is my name, and everything after the "@" character is my "domain" address. The domain refers to where your mailbox is situated and is split into various sub-domains and a top level domain. The top level can be the country where the host computer is situated, or the type of organisation. In my address the top level domain is "uk." Some examples of top level domain country codes are:

au	**Australia**
ca	**Canada**
es	**Spain**
fi	**Finland**
jp	**Japan**
us	**United States**

Top level organisation codes are:

com	**Commercial**
edu	**Educational**
gov	**Government (non-military)**
mil	**Military**
org	**Other Organisations**
net	**Network Resources**

The "cix" and "compulink" parts of my address, the sub-domains, refer to the computer or host name and the service provider respectively. If you look at the address from right to left, each segment narrows down the choice of millions of users until you are left with just me!

TOOLS OF THE TRADE

Without any doubt, the biggest use of the Internet is Electronic Mail. Gone are the days of waiting for the postman to deliver a letter – now you can send Email *instantly* across the world. More and more people are connected to the Net; already you can send Email to the President of the United States (but not the Prime Minister here in the UK oddly enough), to the man behind Microsoft – Bill Gates, to Billy Idol, to Terry Pratchett, even to me! Once you have access to the Net, you also have a unique Internet address that serves as your own personal mailbox. Although this address is yours, you shouldn't regard mail sent to it as being any more secure than mail sent by traditional means. Just as someone can intercept and open a letter, so they could do the same thing with Electronic Mail. I wouldn't regard Email as being any less secure than traditional methods, and with the availability of encryption programs such as *Pretty Good Privacy* (*PGP*) the contents can be encoded so that only someone with the decoder could read the contents.

A LOT TO OFFER

The Internet has much more to offer than just Email – an incredible array of services in fact. Actually, to be precise, it is the networks that comprise the Internet that offer these services, and to use them, there are a number of tools or applications. Telnet is one such tool which is used to connect to other systems from your Internet Service Provider. Not only is a direct Telnet connection much quicker than a conventional modem connection, but it can save a lot of money as well. For example, I am a member of an online system in San Francisco called The Well – obviously this would cost me a fortune in telephone bills if I were to connect using my modem and home telephone. Instead I connect to my Service Provider, a local phone call away, and then connect directly from there to The Well, all at a local rate call.



A terminal program such as Term is your gateway to Cyberspace.

Considering the sheer amount of information available over the Net, I can't conceive that anyone would never want to download some of it on to their computer every now and then. If you are like me, you will be downloading files daily! Luckily there is an Internet tool that makes this an easy job, and this tool is the File Transfer Protocol (FTP for short). Not all the networks connected to the Internet are open to just anyone – many are commercial concerns which require you to be a subscriber before you can access them (such as Cix or CompuServe), others are educational or scientific facilities (such as Universities which have restricted access). However, there are a great many sites which allow access only to specific file area by a method called Anonymous FTP. Probably the largest, and certainly the most popular, of these amongst the Amiga community is situated at wuarchive.wustl.edu and carries the Aminet file area. This area is absolutely massive, with hundreds of new files being added each week. There are directories covering all aspects of Amiga use. Using FTP you can connect to the remote computer – in the case of wuarchive it is in America – and download a copy of a file directly to your computer at home. Of course, you might not know where a file you are looking for is stored amongst the myriad of information on the Internet. But don't worry, help is at hand in the form of another Internet tool – ARCHIE.

THE WORLD WIDE WEB

It's new, it's hot and it's easy to use. John Kennedy dives into a point and click future.

Space may be big, but Cyberspace is definitely catching up. Everyday more and more computer sites are linked up to join the Internet, and each brings with it more and more information. Trying to keep track of what is actually out there is truly a full-time job, and no one in their right mind wants to waste brain power remembering list after list of FTP site addresses.

To try to overcome this problem of 'information overload', researchers at CERN, the European Laboratory for Particle Physics in Geneva, developed the World Wide Web. Known as 'The Web' or 'W3', it uses the concept of Hypertext to hide a lot of the messy details of Internetting from the user. Instead of searching site after site in search of illusive text files, logging on to each in turn, searching through directory after directory, the Web presents the user with an easy-to-use blend of pictures, words and sound.

To use every piece of jargon in the book, the Web is a distributed heterogeneous collaborative multimedia-based hypertext driven information retrieval browser. In plain English, lots of people have got together to present you with words and pictures on your screen and you can click your mouse an awful lot.

WHAT IS THE WEB?

The Web consists of pages of information displayed on your monitor. The pages can contain words, usually illustrated with a few simple pictures. Theoretically it is also possible to include moving images and sampled sound, but at the moment the Web is still quite a new concept, and it has far from reached even a fraction of it's true potential. Besides, not everyone has a dedicated high-speed link and an Silicon Graphics Workstation...

> **"The Web is still quite a new concept and has far from reached its true potential."**

The first page displayed by the Web is usually a greetings page (called the 'home page') incorporating a few options. The exact details on page will depend on which system you are using, but after a few welcome messages you are free to move to wherever you wish in cyberspace. In fact, you can even design your own home page if you so desire.

By selecting from the options presented, you will soon be able to go to more advanced index pages, though if you have used the Web before you may know which pages you want and go straight to them by entering their electronic address.

There is no need to bother with 'logging on' to

HEATED DISCUSSIONS ON THE NET

By crikey, there are lots of mailing lists on the Net, and boy do I mean LOTS! Like Usenet Newsgroups they cover every conceivable subject, and some unconceivable ones. Like Usenet Newsgroups the discussions can be drawn out and very emotional. However, unlike Usenet Newsgroups, these discussions are distributed entirely by Email. To get the mailing list sent to you, you have to subscribe to it. This costs nothing and is easy to do once you have the relevant address; your name is added to the list and you then automatically get a copy of every piece of mail that is sent to the list. Be warned – with some of the more popular lists this can mean hundreds of mail messages a week. Most mailing lists are actually maintained by computer software these days, known as a list server, and these can be identified by the fact that the email address for subscription is prefixed with "listserv".

Listservers can sometimes be quite hard to 'unsubscribe' from, and, if you do get this particular problem, it is best to send email to the list administrator rather than persevere with banging your head against a silicon wall.

See if any of the following mailing lists take your fancy; it's just a tiny cross section of what is available. If you want to know exactly what lists are available, then you can request the list of lists (but be warned; it will fill up half your hard disk) from the following Anonymous FTP site:
ftp.nisc.sri.com
The file of files is to be found in the /netinfo/interest-groups directory.

List Name: commodore-amiga
Contact Address:
subscribe@xamiga.linet.org
Description: Information on every aspect of the Amiga.

List Name: amos
Contact Address:
subscribe@xamiga.linet.org
Description: Discussion about the popular Amiga programming language.

List Name: comix
Contact Address: comix-request@world.std.com
Description: For readers of non-mainstream comics.

List Name: european review
Contact Address:
s947607@umslvma.umsl.edu
Description: A newsletter on European football.

List Name: harley
Contact Address:
harley-request@thinkage.com
Description: Just about everything connected with Harley Davidsons.

List Name: Satnews
Contact Address:
listserv@orbital.demon.co.uk
Description: The mailing list for the Satnews publication, which looks at the worldwide satellite television industry.

A SAMPLE SELECTION OF LISTSERVS

Amnesty International
Send an email to:
LISTSERV@vms.cis.pitt.edu
With the message:
subscribe amnesty <your first name> <your last name>

3D Computer Graphics
Send an email to:
LISTSERV@suvm.bitnet
With the message:
subscribe catia-1 <your first name> <your last name>

Amiga
Send an email to:
LISTSERV@rutgers.edu
With the message:
subscribe i-amiga <your first name> <your last name>

Commodore
Send an email to:
LISTSERV@ubvm.cc.buffalo.edu
With the message:
subscribe commodore <your first name> <your last name>

Cinema
Send an email to:
LISTSERV@auvm.bitnet
With the message:
subscribe cinema-1 <your first name> <your last name>

Weird
Send an email to:
LISTSERV@brownvm.brown.edu
With the message:
subscribe weird-1 <your first name> <your last name>

Kites
Send an email to:
kites-request@Harvard.Harvard.edu
With the message:
subscribe kites <your first name> <your last name>

Penpals
Send an email to:
LISTSERV@unccvm.bitnet
With the message:
subscribe penpal-1 <your first name> <your last name>

Humour
Send an email to:
LISTSERV@tcsvm.bitnet
With the message:
subscribe nutworks <your first name> <your last name>

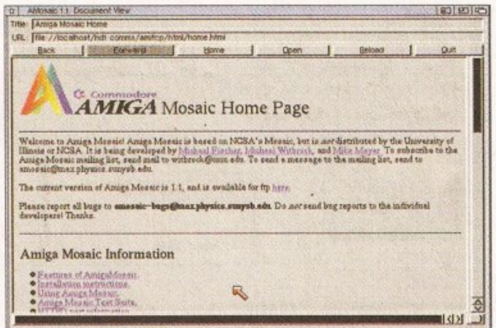
computer systems or to remember complicated downloading procedures; all this is handled automatically for you by the Web's browser software.

Various words on a Web page will be in different colours (if you are using a graphical browser) or followed by numbers (on a text-based system). Selecting a word will bring you to a page with information text on related subject. Sometimes the words will form a menu (like a Gopher system), and sometimes the words will be deep in the text.

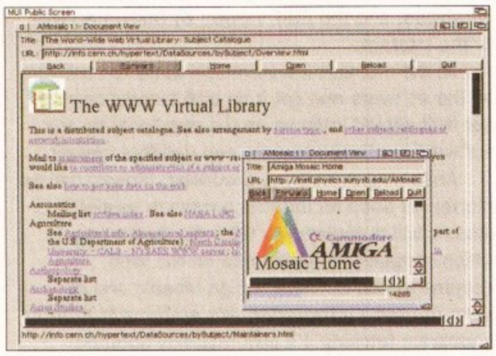
When you select a word, the Web server will rush off and find the next page for you. The pages may or may not be on the same computer system: all that tedious business is completely hidden from you. All you know is that you requested more information, and after a few seconds the information appeared.

The Web server will talk to the remote server (which could be on the other side of the world) and fetch the required page. Text is loaded and displayed first, and then – if your system is set-up properly – any images are downloaded and displayed. It's possible to switch off the images, especially if you are using a slow modem. The Amiga Web server will cache or remember earlier images which will speed up the process.

You can return to the original page at any time, and it's also possible to keep a list of other visited pages and return almost instantly.



The Amiga Mosaic 'Home Page'. When you run Mosaic, it will fetch this page which contains details on the latest versions of software, instructions and a good way of jumping into the Web's other sites.



Now this is using the Amiga's multitasking to the full – not one, but two copies of Mosaic running completely independently. If you can keep track of what's going on, you can really make the most of your on-line time.

HYPERTEXT

The ability to click on specific words to trigger special actions is what Hypertext is all about. Chosen words act as 'links' to more and more detailed information. This concept been given all sorts of grand names such as 'non-linear reading' and it takes a bit of getting used to before you can start to make full use of it. When you get beyond the simplistic menu concept, Hypertext is rather like constantly flicking through five hundred different TV stations, with each station being put on hold until you return. Freaky hi-tech science fiction stuff.

If you want a gentle introduction, think of the AmigaGuide program which is often used to provide documentation in recent Amiga software. AmigaGuide also uses hypertext links and browsing buttons, but imagine that instead of a single disk of information, the hypertext covers the entire planet and encompasses thousands of computer systems. Now you're getting the picture; there is a lot of stuff here to look at.

AMIGA AND THE WEB

How the Web appears to you depends on what software you use to access it. It's possible to use a normal line-based text-only terminal, but this is really missing out on the possibilities. Instead, a dedicated Web browser program like NCSA Mosaic should be used. Mosaic is available for many platforms, including the Amiga. (NCSA is short for

WAVEY'S INTERNET TOUR GUIDE

The following sites offer anonymous FTP and are particularly worth visiting:

wuarchive.wustl.edu
Vast amounts of Amiga PD
ftp.spies.com
Weird and wonderful
filesquartz.rutgers.edu
Everything for the Disney fan
ftp.nevada.edu
Guitar chords and tablature
nic.funet.fi
European Postal Codes
nstn.ns.ca
Origami patterns and hints
aql.gatech.edu
The OTIS online art gallery
quake.think.com
Project Gutenberg store of literary classics
gatekeeper.dec.com
Hundreds of recipes
coe.montana.edu
For everything Star Trek
milton.u.washington.edu
A Virtual Reality
wonderlandcumulus.met.ed.ac.uk
Satellite weather maps

The following Gopher sites contain areas of specific interest:

gopher.wired.com 70
Wired Magazine online gopher.well.sf.ca.u
The Whole Earth Catalogue
wiretap.spies.com
Various oddball files
info.mcc.ac.uk
An online acronym dictionary
gopher.micro.umn.edu
The CIA World Fact Book,
sunic.sunet.se
Details on free and commercial Net
databasesgopher.cic.net
The Electronic News Stand
info.umd.edu
GreenDisk Environmental Information
uts.mcc.ac.uk
What happened in history, today?
kids.ccit.duq.edu
Especially for kids

The following Usenet Newsgroups may be of interest to Amigaphiles:

comp.sys.amiga.advocacy
comp.sys.amiga.applications
comp.sys.amiga.audio
comp.sys.amiga.datacomm
comp.sys.amiga.emulations
comp.sys.amiga.games
comp.sys.amiga.graphics
comp.sys.amiga.hardware
comp.sys.amiga.introduction
comp.sys.amiga.marketplace
comp.sys.amiga.misc
comp.sys.amiga.multimedia
comp.sys.amiga.programmer
comp.sys.amiga.reviews

And if you get fed up with all the computer talk then drop in on Wavey's favourite Newsgroup, talk.bizarre, and get totally out of your teapot!

USEFUL WWW PAGES

Finding your way around the Web is easy – you'll do it without even knowing. From your Home Page, find something like 'Good Places to Start Exploring' and you'll soon be on your way. An excellent place to start is the BBC Home Networking club, which lives at:

http://www.bbcnc.org.uk

From here you'll be able to hop all over the world, and also pick up some extremely helpful information. For general weirdness, try:

http://venus.mcs.com/ ~flowers/html/ cybernet.html

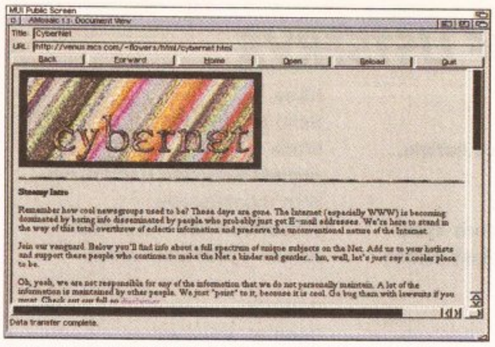
And for a more relaxed and academic approach, try:

http://www.qub.ac.uk/www_home

All of these sites include many links to other sites so use them as starting points for your cyberspace adventures.

LISTS OF LISTS

Lists are rather similar to Usenet – the massive collection of conversational threads read and contributed to by millions of Internet users. To get started, all you do is send an email message to the 'list server,' usually with the message 'subscribe <listname>' as the only line in the text. The list server will look at the From: part of your email message, and use it to send details.



Whatcha lookin' at? Just cos I'm a cyberpunk don't mean I don't know nothin', does it? Link to this site and I'll show you somethin' alright mate.

National Center for Supercomputing Applications, the American organisation responsible for creating much of the Internet).

In order to use Mosaic, you'll need the following hardware and software: **1)** An Amiga running Workbench 3.0; **2)** A modem and suitable SLIP software driver; **3)** A copy of AmiTCP running; **4)** The shareware program Magic User Interface installed; **5)** GIF and JPEG datatypes, and the ZGIF viewer; **6)** Dial-up access to the Internet.

At the moment it's incredibly fiddly to configure all the software and get it up and running correctly, but that should improve as the popularity for the software continues to grow and updates appear.

Assuming everything is working, Mosaic can be started as soon as Internet access is available. Mosaic will automatically fetch its 'home page', which contains the latest info on the Web, documentation on using Amiga Mosaic and all sorts of useful information. It's amazing to think of a program fetching it's own regularly updated instructions, but that is exactly what happens when you run Mosaic. There is even an on-line tutorial on using Mosaic and the Web.

With Mosaic up and running, you are free to explore the Internet simply by clicking on any words and images you find interesting. Images will be displayed on screen, and sounds played through the Amiga's speakers. It's true multimedia, and points the way to the future of comms.

Amiga Mosaic is available from various places, including any Aminet mirror site and its home, amosaic@max.physics.sunysb.edu. More details can be obtained by emailing here, and the FTP site contains the latest version (hopefully 1.2 by the time you read this) ripe for downloading.

If you don't yet have Internet access, a version of Amiga Mosaic which can be used without it is available. Obviously you can't use any internet sites, but you can use it to display suitable hypertext files, several of which are included in the archive.

It's possible to create your own Web hypertext pages using HTML – the HyperText Markup Language – which is a little like creating a rather simple graphic adventure. If your pages are good you might even be able to find a site for them: the BBC Networking Club is only one organisation looking for new talent.

FUTURE SHOCKS

When using Mosaic with the World Wide Web, it's easy to see that this is where the future of the Internet lies. Hostile text-only terminals are on the way out, as multimedia systems become more and more popular.

With a 14,400 baud modem, the current systems are probably as advanced as you would want, especially with a flexible platform like the

WORLD WIDE WEB EXAMPLE SESSION

Perhaps the best way to grasp the power of the World Wide Web system is to sit in on an example session. What follows was my search for information on a particular topic which has been plaguing my personal life: Irritable Bowel Syndrome. My access to the Internet was given by Genesis Project Ltd., a company which exists to offer varying degrees of Internet access including acting as a dial-up Point Of Presence for home computer users like me who can't afford more than £10 a month.

All my software configured properly – I ran the special dialler program and and logged on to the network. Now my A4000 was part of the internet, connected via a Sportster 14,400 modem and a telephone line to Belfast.

With the link established, my Web browser 'Amiga Mosaic' is started by a simple manoeuvre of clicking on it's icon. There is no need whatsoever to configure Mosaic, as all the work is done previously by setting up the slip.device and TCP/IP networking software.

Mosaic ran and, via the modem, loaded the default Home page (see figure 1). From here I found a link to 'Starting Points for Internet Exploration'. This linked to the World Wide Web Virtual Library page (see figure 2).

The Virtual Library lead me temporarily astray, by offering something which sounded quite interesting: The NSCA Digital Gallery of Science. I have always had an interest in medical imaging, so I sneaked a peek (see figure 3). This was a very good example of clicking on pictures, rather than text, to display images. The image was easily downloaded and displayed automatically using Multiview.

But back to work, and returning to the index gave an interesting lead – the National Library of Medicine (see figure 4). Unfortunately this was very much a dead-end, as I wasn't really interested in where to park my car and how to make an appointment with a hospital in America.

Back to the index, and a list of all the WWW servers arranged by country lead me to my old University (see figure 5), where I happened to notice a link to the BBC Networking Club (see figure 6). This brought me to a feature on searching (see figure 7), which lead to a Gopher search using Veronica (see figure 8).

This was obviously where I should have started, as a single search for keyword 'bowel' produced a list of entries including a text file entitled 'Irritable Bowel Syndrome'. Mosaic downloaded it and displayed it, and found it contained exactly the information I was looking for, so I saved it as a plain ascii file for printing.

Mission completed!

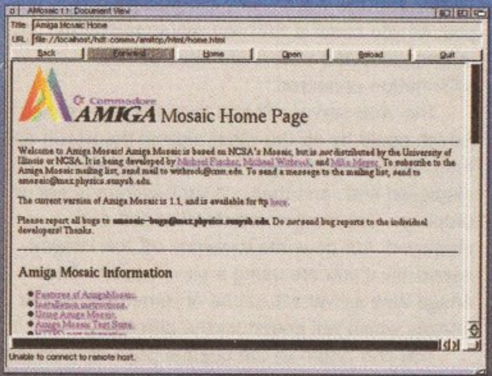


Figure 1. If you have installed TCP/IP and Mosaic correctly, this is the first screen you should see.

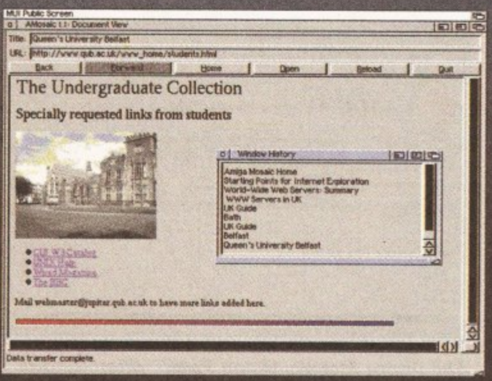


Figure 5. Nostalgic for your university days? Why not visit your old haunts via the WWW?

BEGINNERS START HERE

What is the Internet?
The Internet (or 'Net') is the 'network of networks', linking thousands of computer sites and millions of people the world over.

What can I use it for?
You can use the Internet to carry electronic mail messages to anyone else with an email address. For example, you can send *Amiga Shopper* messages by addressing them to amshopper@cix.compulink.co.uk. You can also download software and take part in group discussions.

How much does it cost?
Using the Internet is free, although gaining access usually isn't, unless you are at university. Typically dial-up access will cost you about £10 a month, with your telephone bill on top of that.

What hardware do I need?
To get on to the Internet from your home, you will need a computer (an Amiga is ideal) a modem (the faster the better – a 14,400 baud modem is recommended), a telephone line and some public domain software.

How do I get onto the Internet?
If you don't have access through work or college, you will need to make use of a dial-up service. Rather like a typical Bulletin Board System, you use a modem to dial up a remote computer site. This will connect your Amiga directly to the Net, and you can use FTP, TELNET, GOPHER and of course, Mosaic.

What is the World Wide Web?
The Web is simply a tool for finding information stored on the Internet. Many computer network sites include a WWW server to allow easy public access to the information they store.

What is Hypertext?
A hypertext document may look like an ordinary text file, but certain words will be highlighted. Clicking on these words will bring up a new page, usually with more details.

What is Mosaic?
Mosaic is a program specially written to cope with the Hypertext pages which make up the World Wide Web. Amiga Mosaic is a public domain program which will display text and pictures, and can replay sound samples.

I can't run Mosaic, can I still use the WWW?*
Yes, use Telnet to log into info.cern.ch and you can use the text-based system.

Amiga. But already the new VFast / Terbo modems are becoming affordable and if you really want, it's possible to link up to a 64Kbit dedicated line.

As digital ISDN lines become more common, it might be sooner than you think before we all have extremely fast data links connecting every household to the Internet.

With programs like Mosaic becoming more popular, and advances such as hardware based FMV systems, it's also possible to imagine a time when moving video is as common as text. Imagine your computer terminal linked permanently to the Internet via a high speed link. You can send email to your friends on the other side of the world, but by now email consists of digitised video and sound. You'll be able to watch films and attend live concerts over the networks, and watch images returned live from space probes. AS

JARGON BUSTING

Hypertext – a non-linear document. Click on keywords to bring up more information on your chosen subject.
Point Of Presence – an Internet 'Point of Presence' or 'PoP' is a computer which you can dial up from your home computer using a modem. Once connected, your computer is temporarily connected directly to the Net, and you can send email and download files – or use the World Wide Web.
SLIP / PPP – protocols used when using a serial (modem) link to the Internet. On the Amiga, you will need a software slip.device in order to connect: there are several in the public domain. CSLIP is the same as SLIP, but with come compression to speed things up.
World Wide Web – the Hypertext system which navigating your way around the Internet as easy as clicking a few buttons. When used with the program Amiga Mosaic, as well as text you can get graphics, sound and potentially animation.
Telnet – a program which connects you to another machine across the internet. It works in a similar way to a comms program such as NComm or Term
GIF – Graphics Interchange Format. A file format for images which can be read and displayed on a range of computers, including the Amiga (via a datatype).

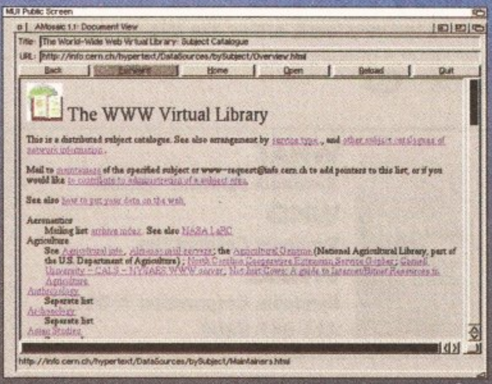
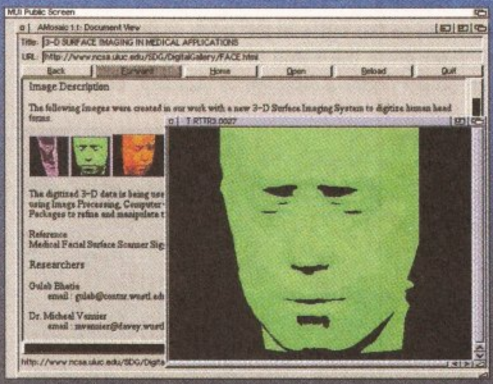


Figure 2. The WWW Virtual library is an interesting source for all manner of documents


Figure 3. You can view the large image by clicking on the smaller ones (about 3D imaging).

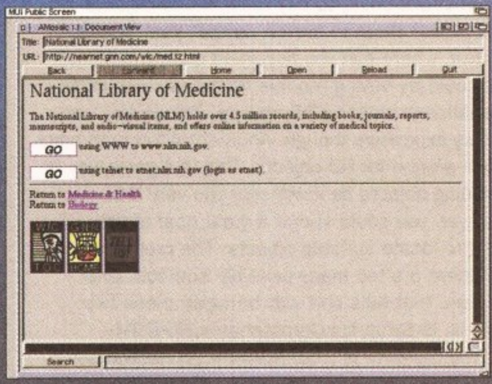


Figure 4. The National Library of Medicine. Need where to park your car? Look no further...

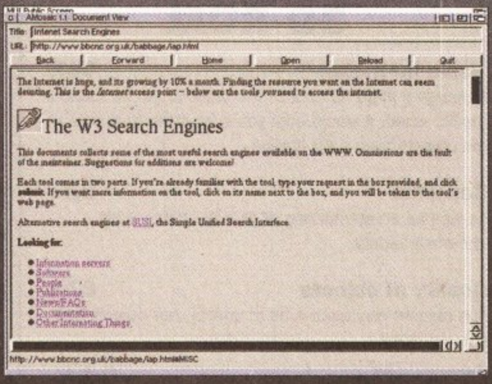


Figure 6. The BBC networking club is an excellent place to find out what's new on the net.

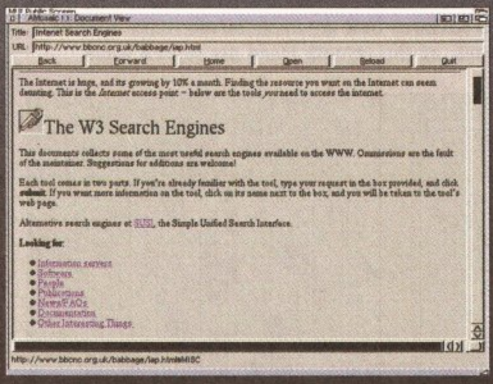


Figure 7. There are a variety of sites which allow you to search for specific words or phrases.

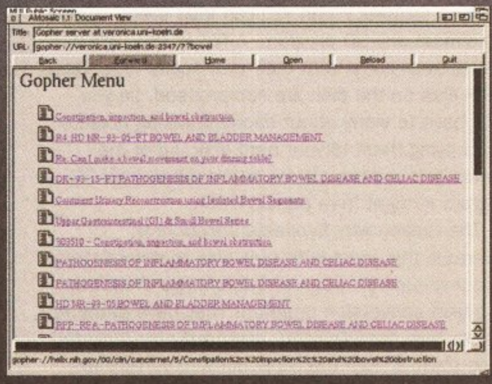
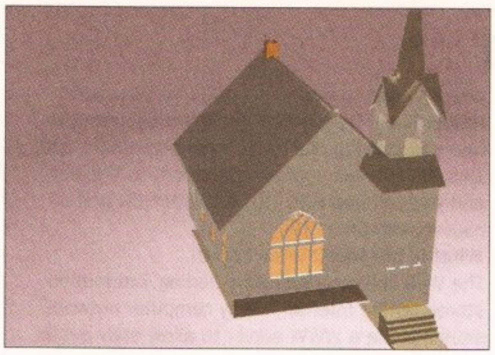


Figure 8. Having bowel problems? A quick search can find plenty of files on digestive ailments...



The 3D-ROM is a CD-ROM that contains well over 580 3D models and 400 texture maps.



As well as varying in their complexity, the objects also vary in their adaptability.

The Third Dimension

BEST BUY

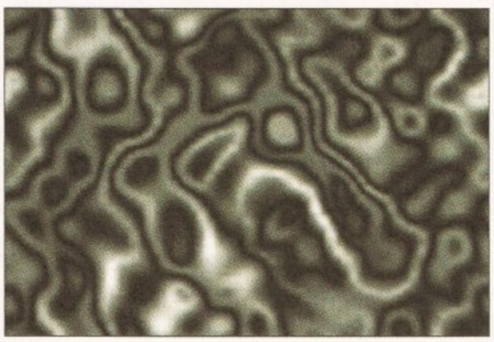
Building your own 3D models can be extremely time-consuming. Graeme Sandiford saves lots of time with Syndesis Corporation's 3D-ROM.

It's a great feeling to finish building a complicated 3D model – you get a real sense of accomplishment. However, as satisfying as it may be, building your own objects can be extremely time-consuming. If you are working professionally it can often be more convenient, and cost-effective, to buy ready-made objects and then adjust them to match current your needs.

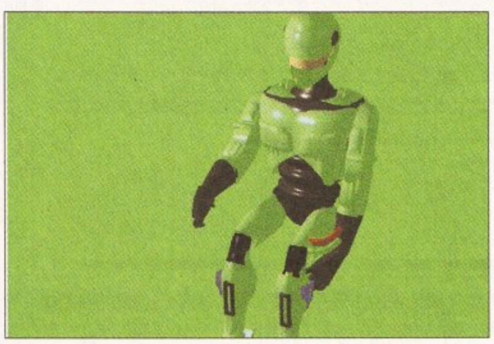
But, where can you find good quality models? You could try buying models from companies who specialise in creating 3D objects. This option can be very expensive though. Another option is to have a look around for PD objects. This is a great way of obtaining objects as it will cost you very little. However, you could spend a great deal of time trying to locate suitable objects. The problem is that there are too many possible sources. One solution, that falls part way between these two options, is Syndesis Corporation's *3D-ROM*.

The *3D-ROM* is a CD-ROM that contains over 580 3D models and 400 texture maps! The models are saved in five object formats: *LightWave*, *Imagine*, *DXF*, *3D Studio*, and *Wavefront*. The variety in formats mean you can load these objects into almost any 3D program. A few of the *LighWave* objects even come with their own scene files. None of the files on the disc are compressed, so you don't have to worry about decompressing objects and copying them to your hard disk. All of the objects and scenes can be accessed by your 3D program straight from the CD-ROM.

The reason why Syndesis Corporation undertook this mammoth task was to demonstrate the conversion prowess of *Interchange Plus*, their 3D object conversion program. They have gathered objects from the PD world, and have also included demo objects from the collections of companies such as Viewpoint. The inclusion of the demo objects gives you the chance to sample the quality of the company's work. Finding what you want would be a difficult task if you had to find suitable objects by wading through the CD-ROM's directory loading objects that sound interesting. Fortunately, you don't have to do that as the manual includes printouts of the rendered objects. You can then browse through the printouts at your leisure, and then load in any that look interesting. Alternatively, if you are looking for something in particular, you could turn to the index at the back of the manual. The index gives the name of each object, but lists each object under a descriptive heading, such as aircraft, animals etc. This makes it easier to locate a particular type of object. Another aid to finding the desired object is the directory that contains the object – this is also listed.



The textures that are supplied are really a bit of a bonus, as the objects alone are superb value.



The objects cover an extremely wide range of everyday, as well as slightly more unusual things.

The objects cover an extremely wide range of everyday as well as unusual subjects. As mentioned before, there are over 580 objects, and their quality varies quite a lot; some are very basic, others are highly complicated. Obviously, the more complicated objects will require more memory to render. Some of the areas that are covered by the *3D-ROM* include cars, apparel, planes, logos, animals, spaceships, anatomy, and almost everything else. There are some familiar objects contained on this disc, such as Carmen Rizollo's model of the Enterprise from *Star Trek: The Next Generation*. If you are a bit of a Trekky, you will be pleasantly surprised by the number of other Star Trek vessels that have been included – the only one I didn't notice was the Borg ship.

As well as varying in their complexity, the objects also vary in their adaptability. Some of the more complicated objects are quite difficult to adapt to your needs, but the majority of the objects can easily be altered to your own requirements.

The textures that are supplied are really a bit of a bonus, as the objects alone are more than enough to give you value for your money. As with the objects, there is a great deal of variety, but all of them can be tiled seamlessly. The majority of the textures are obviously computer-generated, with swirling plasma-like images being the flavour of the day. But, there are a few unusual patterns made with scanned pictures of famous people.

I had eagerly been awaiting the arrival of this CD-ROM for some time and, I'm glad to say, I was not disappointed. Syndesis Corporation's *3D-ROM* is excellent value for money and an invaluable tool for any 3D enthusiast. If you are a good 3D-modeller, you might even get the next disc free if you send in an object to be included on the second disc. At the very least, a disc like this can act as a good source of components for building your own objects… AS

WHAT
***Syndesis 3D-ROM* – $199**
WHO
Syndesis Corporation
WHERE
Syndesis Corporation ☎ 0101 414 647 5200

CHECKOUT 3D-ROM

Value for money 94%
Although a large number of the objects can be found in the PD world, it would cost you a lot more to buy all of the objects from a PD library.

Contents 92%
As well as an abundance of objects, there is an immense variety.

Quality of objects 87%
The objects vary quite a bit in quality, but overall they are very good.

Overall 91%
Anyone who takes their 3D rendering seriously should order a copy now!



The tablet is the electronic equivalent of a notepad and pen. Graeme Sandiford reviews two head-to-head – Genius HiSketch 096 and Tabby.

Two Top Tablets

One of the things I remember about the first time I tried to use a computer to draw an image was how awkward it was to use a mouse to draw a smooth line. I guess the unusual shape of the mouse, and the different grip required, made it harder to use the mouse *naturally* for drawing. One of the best replacement input devices is the graphics tablet.

These usually resemble a notepad and pen, and to a degree they are the electronic equivalent. The way in which they work is quite simple – you have an active area on the pad which can detect the position of the stylus in relation to the pad. With both the Genius HiSketch 906 and the Tabby, the stylus' position relates directly to your mouse pointers placement on the screen. If you place the tip of the stylus in the top-left corner of the pad's active area, the mouse pointer will appear at the top-left of the Amiga's screen.

Great, so why hasn't everyone got one? Well, the main reason for the graphics tablets not being widely purchased is that they are very expensive. The only tablet that was available for the Amiga at an affordable price, until recently, was Genius HiSketch. Now, however the Tabby has been released with a set of drivers that allow this budget tablet to be used with the Amiga. Both of these products are only entry-level tablets, so we shouldn't expect too much in the way of advanced features such as pressure-sensitivity.

CARDS ON THE TABLET

Aside from the price, the most obvious difference between the tablets is their size. The Genius tablet measures approximately 12.5x9.5 inches, while the Tabby is 5.5x6.5 inches. At first look it would seem that the Genius has almost twice the area of the Tabby. However, this a little deceptive as the active areas that the tablet can detect movement in, are almost equal of both tablets, with the Genius only being about half an inch wider. The Genius' *overall* size still makes it more comfortable to use, as you have a larger area to rest your hand on as you draw. This is not a problem if you have a big tidy desk, but if, like me, your desk is crowded, you will find it easier to rest Genius on your lap. The Tabby is too small to easily rest on your lap.

Both of the tablets have an excellent build-quality and holders to keep the stylus out of the way when they are not being used. The Genius also has a pair legs that can be unfolded to give the tablet a more comfortable resting angle, but the Tabby is more solidly constructed.

ABSOLUTELY FABULOUS

Both of these tablets work on a absolute coordinate system. As mentioned before, the stylus' position relates directly to the mouse pointer's position. Surprisingly this system can take a little getting use to. The reason for this is that when most people use a mouse they tend to back track (by starting a motion, lifting the mouse, placing it in a different position and then continuing to move the mouse in the same direction as before). With the Genius and Tabby tablets this does not work – as soon as the stylus makes contact with the tablet, the pointer is moved to the corresponding screen position. This seems a little weird at first, but you soon get used to it.

One advantage of using an absolute coordinate system is that it makes tracing images much easier and more accurate. In fact, I managed to get some rather good results very quickly. In order to trace an image you only need to place it over the active area of the tablet and then trace around it with the stylus. The only problem is that if you are tracing an image that has a lot of detail, some areas of the image will be obscured from your view by the stylus' point. To get around this problem, Genius can supply a puck. The puck is similar to a mouse, with one difference – it has a clear plastic appendage with a cross hair that can be used to trace an image with a high degree of accuracy. This sounds similar to using a Tracy and a standard mouse, but the results are better because of the tablet's absolute coordinates.

DRIVER SOFTWARE NEEDED

Both of the tablets need to be attached to the Amiga's serial port, so you won't be able to use a modem at the same time. As a result, you will need some software to tell the Amiga that a tablet is attached and how to respond to it. To achieve this end, both programs come complete with driver software and installation instructions.

The Genius tablet also comes with some testing software. The Genius' driver *does* look rather dated, however, and has little in the way of control options. This is probably because the Genius has been around for so long. It still does the job though, and the software can be run each time you boot the machine by altering your startup-sequence.

In contrast, the Tabby's driver software has just been written. The driver works as a commodity – so to activate the driver at startup, you can simply place it into your Workbench startup drawer. The one drawback is that you will need a Workbench 2.04+ machine.

Both drivers work through mouse-emulation; this means that both tablets should work with your existing software. We managed to try them both with several packages and Workbench itself and encountered no problems whatsoever, although programs which do not use the operating system will not work.

In conclusion, there is not a great deal to differentiate between these two tablets. The Genius is physically larger, but requires an additional power supply. The Tabby has superior software, but is a little too small to be used comfortably over very long periods. In the end our decision came down to money. The Tabby is less than half the price of the Genius (something you can't argue with in the end), and because of this earns our sincere recommendation. AS

CHECKOUT
GENIUS HISKETCH 096
TABBY

Driver Software

Genius HiSketch 096 — 80%
It does the job, but is fairly limited in the options it gives you.

Tabby — 85%
The software is newer and has more options.

Ease of Use and Installation

Genius HiSketch 096 — 83%
The installation of the tablet is quite straight-forward, although the extra power supply is a pain.

Tabby — 92%
Plug it in, run the software and away you go.

Price

Genius HiSketch 096 — 77%
It is affordable and performs quite well, but it is still over twice the price of the Tabby.

Tabby — 96%
Half the price of the Genius.

Overall Ratings

Genius HiSketch 096 — 86%
A good product, and has the advantage with its puck and overall size, but loses out due to its price.

Tabby — 94%
The victor, mainly due to its price – it really is affordable.

WHAT
Genius HiSketch 096 – £129 (£29 for puck)
Tabby – £54.99

WHO
Genius HiSketch 096 – Genius
Tabby – Micrograf International

WHERE
Genius HiSketch 096 – Datel Direct ☎ 0782 744707
Tabby – First Computer Centre ☎ 0532 319444

PAR EXCELLENCE

Gary Whiteley takes a thorough look at the DPS Personal Animation Recorder and Video Capture Cards and is well and truly impressed.

Imagine this scenario. You're an Amiga animator, doing work for a TV programme. Your client wants delivery on MII tape (Panasonic's competitor to Sony's Betacam), but you don't have an MII machine – just a dilemma – how will you get all the 24-bit frames being rendered by your 3D package on to tape?

The first (and most expensive) option is to go out and buy an MII recorder and a single frame controller, along with a 24-bit graphics card and high-quality genlock or video encoder to convert the graphics output to the component video format of the MII deck. Hook it all up, insert a costly video tape and start the long, drawn-out cycle of render frame, notify single frame controller, activate VTR and record frame, roll back VTR, wait for next frame to render and so on. Such an option is likely to set you back at least £10,000 – and that's big money to anyone. Readers with experience of the above process will know that not only does such a time-consuming recording process tie up an expensive video deck for long periods, it also causes major wear and tear to the deck itself, in particular its delicate (and far from cheap) recording heads. Single frame recording can easily cause a VTR to expire long before it would during 'normal' use. You could, of course, soften the financial burden by just hiring in an MII recorder as required, but again the costs could still be quite substantial – and you'll still need the RGB-video hardware and single frame controller. Another option would be to archive all the individual frames of your animation (on to tape streamer or removable hard drive) and pay a facilities house to assemble it all together, but you may have to wait a few days to view the results – and if you don't like them you'll have to repeat the whole process until you do! Plus, a big animation can require a *huge* amount of disk space (and I'm talking perhaps 500-odd frames of 700K or more each). That's some expensive storage. The cheapest, but least desirable, route would be to buy a very large hard drive, lots of RAM and equip your Amiga with the fastest accelerator card you can afford and produce HAM-8 animations to play back live to tape. Unfortunately this 'solution' requires that you compromise a little on the output quality, isn't actually that cheap, almost certainly won't play back at the required 25 frames per second, or (if it does) won't be full PAL overscan, and it requires an AGA Amiga.

JARGON BUSTING

Component (YCrCb) – video signal used with top-end/broadcast VTRs. Superior signal quality is achieved by processing its three components (Luminance [Y], Red-Y [Cr] and Blue-Y [Cb]) separately. Commonly used in BetaCam and MII systems.
Composite – composite video is a combined Luminance (Brightness) and Chrominance (Colour) signal used in older video equipment. Modern equipment is also likely to have composite connectors so as to be backward-compatible, although it is better to use Y/C or YCrCb when available. VHS and U-matic systems use composite video.
Rendering – the process of generating an image from a 3D program and its scene and object data.
Rotoscoping – importing video or film images (usually live action sequences) into a computer for further manipulation – such as image processing, recolouring or other graphics effects – before recording them back to tape or film. S-Video (Y/C)A two-part video signal composed of separate Luminance (Y) and Chrominance (C) elements, as used by S-VHS and Hi8 video equipment. Better quality than composite video.
Single Frame Controller – hardware/software required to interface a computer with a high-end video deck capable of recording single frames as they are rendered to build up an animation sequence.
Time Lapse – a film or video recording technique where single images are only recorded at pre-determined time intervals, for instance one frame every minute. Time lapse recording is how those super-fast plant growing, or speeded-up cloud sequences are produced.

BLITS & BOBS

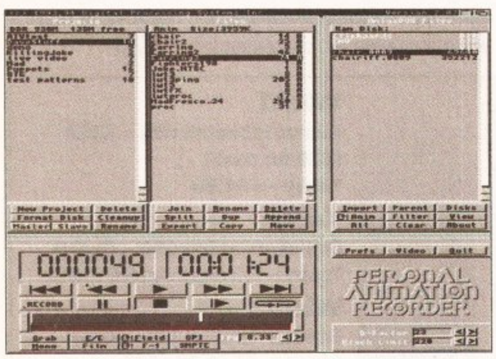
The Personal Animation Recorder was originally developed as a storage solution for Video Toaster users and Lightwave animators.

SEND IN THE CAVALRY

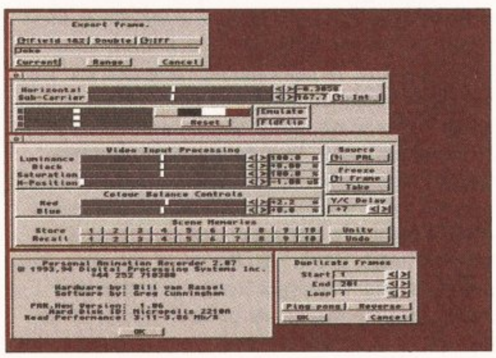
So, without spending large amounts of money, it looks like you're in trouble. Wrong! There's an obvious solution – make full-colour animations which can be played back directly from the Amiga at broadcast quality and full frame rate. Record your frames direct to digital disk storage as each is rendered, and then play the resulting stills and animations directly to video. Sounds impossible? Sounds expensive? Perhaps, but when DPS produced the PAR they made a major breakthrough in affordable single frame recording systems. True, there are already a number of top-end digital disk recorders on the market – if you have £30,000 plus to spend. But the Personal Animation Recorder card (PAR) costs under £2,000 (not including the big box Amiga to house it in, of course). A large, dedicated IDE hard drive is also required, which can cost anything from £750 (ex-VAT) for a 1Gb drive, around a grand for 1.7Gb and upwards. Still, the total cost is likely to be considerably less than you would pay for a professional S-VHS edit deck, never mind a graphics card, genlock and SFC too. And, even if you add the optional (and virtually essential) capture card, the total cost of a great Amiga and PAR system should be well under £7,000 – which is, under these circumstances, an excellent price. And that's the obvious answer. Record your animations to the PAR, preview them on a suitable video monitor, check that everything is as you want it, then hire an MII deck for half a day, record your animations direct to tape, and Bob's your uncle. (Actually, he is – Ed).

THE PAR SYSTEM

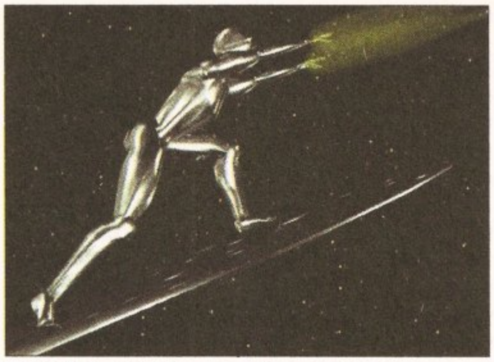
There are two components central to the basic PAR system – the PAR card itself and the special IDE drive it requires. Plug these into an Amiga 1500/2000/3000 or 4000 with at least 1.2Mb of memory (plus as much as your software applications require) and output to two video monitors (an RGB one for the Amiga and a purely video one for the PAR's output) and you're in the animation recording business. The PAR itself installs into an Amiga Zorro slot and links directly to a dedicated IDE drive. The PAR has three video outputs – composite, S-video and component (YCrCb) and a reference video input for synchronising the PAR to a video edit suite if necessary, so that clean vision mixing and editing functions can be carried out on the PAR's video output. Once the software has been installed, and the PAR's output hooked up to a suitable VTR/monitor, then there's no time to lose in



PAR's software is easy to use with four areas for loading/saving of PAR projects, load and save from AmigaDOS, sequence playback and capture control, and preferences and quality options.



Here are some of the additional software requesters which appear at times in the centre of the PAR's main screen. Many of the PAR's functions have their own pop-up control panels.



The PAR is ideal for recording single frame animations for direct, full-speed playback. This example show just how good their quality can be.

getting to work. Although the PAR's drive isn't directly accessible as one of the Amiga's own hard drives, the PAR software fools the Amiga into thinking that it is by making it appear as a standard disk device (named DDR:) which can have data recorded to it as normal whenever the PAR software is running. So files which would usually end up on an Amiga hard drive can be directed straight to the PAR's drive and processed as PAR files, rather than simply stored as individual files on the Amiga hard drive.

But don't get the idea that the PAR just stores and replays sequences of images, because this isn't the case. Each frame recorded to the PAR is compressed using DPS's own system and then saved either as a still frame or as part of an animation file. Such compression techniques make it possible not only to cram a significantly larger number of images on to the PAR's drive than would otherwise be possible, but also to decompress an animation on the fly and play it back in real time, even at 752 x 576, 24-bit resolutions. And since the PAR handles the donkey work, all that's required is to output each rendered image to the PAR for processing and storage and the rest is done automatically. Result – one high quality animation. No problem! All this seems straight-forward enough – and it is. PAR can accept any standard IFF 24-bit image for input, as well as Targa and SGI (Silicon Graphics) files, but it can't cope with non-24-bit IFF files – any *DPaint*-type graphics must be converted into 24-bit images before the PAR will accept them. Since most of the top paint, morphing and rendering packages on the Amiga are able to output 24-bit files, there probably won't be a huge outcry about the limited file format support – especially since the PAR is an Amiga animator's dream come true. Such restrictions, however, serve to highlight the fact that it would be as well to own an image processing utility such as *AdPro* (v2.5 or later) or *ImageFX* if you do plan on converting other image files for use with the PAR.

SO, WHAT CAN I DO WITH PAR THEN?

The PAR provides broadcast-quality output and can be used for all kinds of professional video and animation applications, including:

Rotoscoping – Images are captured from live or pre-recorded video (either from tape or direct from camera) for further manipulation in paint, 3D or image processing software. Frames can then be retouched, recoloured, composited, have image processing effects performed upon them, and more. Once changed, the frames can be recorded back to the PAR.

Image capture (including time lapse) – Time lapse recording has a number of applications, from science to security. By recording a single frame after each given time period, an accelerated version of a process can be observed on playback, making its observation and understanding easier. Suitable time lapse subjects include: plants growing, daily observations of weather patterns, monitoring progress on archaeological digs and building sites, watching animals and other dead organic objects decay (?? – Ed), and so on. Security applications include multi-camera monitoring and recording.

Single Frame Animation Recording – The PAR is ideal for computer animators as it automatically assembles 3D (and other rendered images) into an animation as each they are produced – leaving you free to get on with your life and releasing an expensive (and fragile) video deck. An Amiga-equipped PAR can also be used as an animation recorder in conjunction with networked SGI and/or PC machines running suitable software (such as *Alias* or *3DStudio*, for instance). As the PAR can handle both SGI and Targa image formats it should be quite a simple matter to have the network server send the images to the host Amiga, and then record them to the PAR.

Use As Virtual VTR – Because it is non-linear (in other words data can be recorded anywhere on the PAR's hard drive), images can be recorded and accessed almost instantaneously. This is impossible with videotape, which has to be wound backwards and forwards until the required picture/s can be found. With additional editing software and remote control access, the PAR could easily form the basis of a non-linear video editing system.

Still Store – As well as recording animations, the PAR can also save stills (up to 10000 on a 500Mb HD). With its instant recall the PAR could form the heart of an interactive database, image library or automated television information player – for instance supplying local shopping, travel and other information to tourists in a hotel, and include animations and film clips as well as static screens of information. Whilst writing this article I heard that SCALA have produced an EX to control the PAR from *ScalaMM300* and *InfoChannel*, so maybe they already have such applications in mind?

Camera Animation – Traditional animators can use the PAR to record direct from camera and have their animation built up automatically as they go. By replacing the mouse with a dedicated foot-pedal (or similar hand-held device) the whole recording process could be triggered at the animation bench itself.

THE CUTTING EDGE

Once an animation has been recorded to the PAR it can be edited, to some extent. For instance, a PAR animation file can have frames deleted from it, new frames can be inserted by using a combination of the Split and Join tools, or be appended on to the end of an existing PAR animation file. Frames from a PAR animation can be exported directly as IFF, Targa or SGI files and image processing software can be used to further process the files. Whole animation files can be duplicated, or just a range of frames, and ping-pong animations can be made to play in a continuous forward/backward loop.

CAPTURING FROM THE WORLD

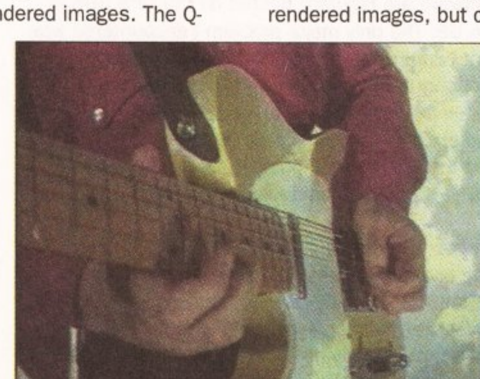
Although the PAR itself has no way of capturing video directly to the hard drive, there is an additional card available for such tasks. Known as the AD-3000 Video Capture Card, it interfaces

Q- FACTOR

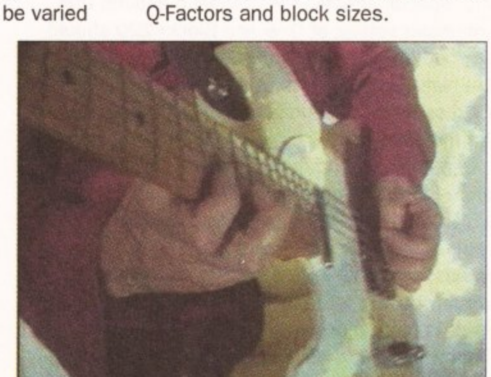
PAR has variable capture quality settings when grabbing from video or storing rendered images. The Q-Factor is set to the best possible quality when recording Amiga-rendered images, but can be varied when grabbing from video. The three images were grabbed using different Q-Factors and block sizes.



Q-Factor=1 Block size=220. The best compression, but the worst image.



Q-Factor=15 Block size=300. This one would be completely acceptable for broadcast quality.



Q-Factor=23 Block size=220. This was grabbed as a still frame, providing the very best quality.

TECH SPECS

PAR DR-3150
Video Outputs – Composite PAL (BNC), S-Video PAL (4-pin).
Component Output – PAL (Betacam/MII, BNC)
Video Input (External Sync) – Composite PAL (BNC)
Storage Capacity – Between three and five minutes of animation recording or 5,000–10,000 stills on a 500Mb hard drive. Variable speed playback. Random Access still frame retrieval. Digital quality for unlimited first generation output.
REAL TIME CAPTURE CARD AD-3000
Video inputs – Composite PAL (BNC), S-Video (4-pin)
Component Output – (Betacam/MII, BNC)



The capture card provides top-quality video grabbing (in real time). This example was captured direct from component Betacam.

directly with the PAR via a short ribbon cable (and for which reason the AD-3000 must be located very close to the PAR card – in a PC slot). The Capture Card has composite, S-video and component inputs and is dead easy to use, other than deciding what values to set the Q-Factor and block size at! Together, the Q-Factor and block size determine the quality at which the captured video images will be saved on to the PAR's HD – and so control how good the playback quality will be. The Q-Factor setting ranges from 1 to 23, and the block size can be varied through a somewhat wider range. I tried various Q-Factors (just for fun) and you can see some of the results illustrated here. The Q-Factor performs a similar function to the compression setting used by JPEG programs. The lower the Q-Factor, the higher the compression, the smaller the file, and the worse the image looks when played back. A Q-Factor setting of one, for instance, produces blocky-looking images – ones which would be useless for most purposes, but might be OK for special effects. The manual mentions that an optimum setting of Q=8 and Block=220 should be a good starting point for grabbing (and playing back) high-quality images at an efficient compression ratio – and indeed this does appear to be the case.

One important point to note when setting the Q-Factor is that if it (and the block size) are pushed too high, then the PAR and its hard drive might not be able to keep up with the required compression/read/write cycles and data will inevitably be corrupted during recording. The answer is to do a few experiments to determine the optimum storage/quality you require and adjust the settings until you feel you've achieved it. On the other hand, a series of pre-set defaults would come in handy as a time-saver for less technical (and experimental) users. In action, however, grabbing to the PAR is simplicity itself. You can view incoming video by depressing the E/E button (E/E means Electronic-to-Electronic in video speak) so that the input is sent directly to the PAR's video outputs for monitoring. Hitting the Record button also puts the system in E/E mode and lets you set both the incoming frame rate and how many frames of video will be captured (which, inevitably, will be limited by the space available on the hard drive). Once activated, video is captured in real-time and options are also available for time lapse recording or for grabbing a frame each time the mouse is clicked (Manual mode). The Manual mode is ideal for traditional rostrum animators, or for imparting random-speed effects on captured video. However you capture, with the right Q-Factor and block size settings, you'll be amazed by the quality of the PAR's video capture when you play the sequence back. Playback is just as easy as grabbing – just use the VCR-style buttons or hotkeys from the keyboard. Once a clip has been selected, its first frame is displayed on the output monitor's screen. Pressing the Play button starts instant playback, in real-time, and the results look brilliant. Mind you, output quality depends on input quality – but PAR's compression is completely transparent when done properly and the image playback is, to all intents and purposes, identical to the original input. Once captured, images can be exported to other software by using the PAR's Emulate function, which decompresses the PAR file on demand and sends the images as IFF (or Targa or SGI) files to your image processor, or any other software.

Since PAR records images as digital data, it can also be used for variable-speed (ie slow-motion) playback. Simply set the playback speed (from 25 fps down to as little as 1 frame every 8 seconds) and off you go. Clean, crisp images – at the speed you want them. One other thing – as the Capture Card is based around a digital framestore, there is scope for digital picture processing to be applied to the incoming video. Accordingly, some Proc Amp (Processing Amp) features have been added to let the user make corrections (or add colour effects) to the video feed. Colour balance, brightness and black level, saturation and horizontal position can all be adjusted by means of on-screen slider controls and the picture can even be stripped of colour entirely for that 'retro' look.

ANY PROBLEMS THEN?

So much for all the good features. Surely the PAR system must have a few problems? Inevitably, yes – but they aren't major worries. From what I've heard, DPS are extremely good at responding to bug reports and user feedback, so any problems are quickly addressed and bug-fixed versions of the software are regularly posted on the DPS BBS in the US. The only major problem I encountered was that captured video will sometimes break up, probably because there isn't the disk storage space available for the images or the Q-Factor/Block size is set too high. Perhaps this is just the result of me pushing the system too far, rather than an actual fault.

THE BRIGHT FUTURE

One or two additions would make the PAR even better for truly professional use. I'm definitely not advocating full non-linear editing capability here, but simply slightly better control. One thing that would be extremely handy would be external serial control from an edit controller – then allowing the PAR to be used as a virtual VCR source, in the same way as any other VCR with serial port control. Only a simple GPI trigger is currently included.

DEFINITELY UP TO PAR

In conclusion? Even at just under £4,000 for the full PAR system, there's no way that I would call the PAR expensive. It's impossible to get an S-VHS deck capable of handling accurate single frame recording for this price, let alone a combined broadcast-quality single frame digital recorder, frame grabber and video encoder. In fact, the only way to describe the PAR is as a real bargain. But I don't need to teach the professionals how to suck eggs. Check out the PAR. And soon! Gary Whiteley can be contacted by e-mail as drgaz@cix.compulink.co.uk. Thanks to Dave Barnard (Consultant for DPS) for access to his PAR system. Phone 071 724 2024 or email dbarnard@cix.compulink.co.uk for more info. AS

WHAT

DPS Personal Animation Recorder DR-3150 – £1675
DPS Capture Card AD-3000 – £895

WHO

Available from Digital Processing Systems, Riverside Business Park, Unit 2, Dogflud Way, Farnham, Surrey, GU9 7SS ☎ 0252 718300 Fax: 0252 718400

WHERE

Micropolis 2210A 1GB (£750) and 2270A 1.7GB (£1034) hard drives are available from Migate Computers (☎ 081 318 1424) or from DPS (see details above). All Prices are Ex-VAT.

CHECKOUT PAR

Documentation 85%
Good, easy to understand and follow – though some of the technical stuff (especially about the compression factors) could be better explained.

Quality 95%
Extremely impressive – and most certainly up to broadcast quality.

Speed 100%
Fast! Seamless, real-time, full overscan, full colour playback. Almost unbelievable.

Features 90%
If external control via serial links (for remote capture and edit playback) were included, the PAR would indeed be brilliant. As it stands, it's just plain excellent.

Price 90%
Believe it or not, a full PAR setup is actually something of a bargain. A fully-configured PAR system replaces a single frame controller, real-time digitiser, broadcast-quality video output and single frame VTR. Great for serious animators everywhere – and not just Amiga-based ones.

Overall 95%
It's an amazing piece of kit which could quickly become the workhorse of any professional animation setup. If you currently use a single frame VTR, get a demo of PAR arranged today.

Groove with the music

Graeme Sandiford discovers that he can make music videos of his own, with Video Creator.

One of the uses a CD32 can be put to is playing audio CDs. But the machine is also capable of much more; it is equipped with some of the best multimedia hardware available. So why not combine the best of both worlds by exploiting both the Amiga's audio and graphics abilities?

Never ones to be left out when it comes to multimedia innovations, Almathera have done just that. *Video Creator* has been designed to harness the power of the CD32 in order to create mind-blowing videos to accompany your favourite CDs.

The whole of *Video Creator*, including animations, still images and vectors, is supplied on a single CD-ROM. There are a number of example videos supplied as well. These not only look and sound great, they also give you a chance to see the best way to go about creating your own videos. The idea behind *Video Creator* is relatively simple – you load your images from the disc and then insert them into time slots. Each image will be displayed in chronological order and can have special effects applied to them. These effects can include anything from simple colour-cycling to complex overlay effects.

HOW TO GET STARTED

You might expect a program capable of such complicated effects would be hideously difficult to use. Thankfully it isn't – if you wanted to, you could just run the program, without referring to the manual, and get some pretty stunning images. The quickest way to go about this is to use the program's Random Raves function.

Don't worry, this has nothing to do with Tango-drinking youths sneaking around the countryside trying to avoid being detected by the police. It's just the part of the program you would use to create random videos. It loads random images and effects and creates videos for you to view from them. If things become too much for you, then you can adjust the intensity setting. The lower end of the scale is labelled Ambient, and the upper end Rave. When the setting is closer to Ambient you are less likely to be subjected to too many retina-burning PsychoFlicker effects.

You can instruct Random Raves to play a specific track on a CD, all of them or a random one. You would be surprised how good a job the program does at mixing random images without repeating sequences.

DOING YOUR OWN VIDEO

Once you have seen how the experts have gone about creating videos, you will probably be itching to try your hand at creating your own videos. The best way to get started with creating your own video is to load in one of the example videos supplied. Two ideal ones are Effect examples 1 and 2 – these will demonstrate most of the effects that are available. Just before each effect is executed, a message will fade in and display the effect's name.



This is an image from one of the sample videos supplied with Video Creator.

Another good way to get started is to just load a few example images into some effects slots and then juggle them into an order that you are happy with. The program will display a thumbnail of each image so you can easily pick out the ones you find attractive. Thumbnails are also displayed next to the effects entry; this helps you to identify the effect from its image as well as its number. This is only one aspect of the program's excellently designed interface. The program as a whole is very easy to use – most of its features can be accessed by clicking on one or two buttons.

In order to help you arrange the available effects, you can copy, delete and move effects by pressing the appropriate button. If you prefer, you can alter the timing of the effect by moving its marker along a time line at the top of the screen. You can also go one step further, and synchronise an effect with an audio event. To do this, you need to press the synchronise button and then press the start button. The current audio track will then be played back – when you get to the part of the playback that you wish the effect to be executed, you just push the red button.

If you've created a video that you're particularly pleased with, you will no doubt want to save it so it can be displayed at a later time. Unfortunately, a standard CD32 does not come with a floppy drive. To add a drive, you will need to purchase an expansion module. The alternative is to connect your CD32 to a VCR and record it that way.

MIND-BLOWING EFFECTS

Without a doubt, the best part about the program is its effects. There are absolutely loads of mind-blowing effects available, and there are add-on disks planned for release too. There are too many effects to list here, so I'll just give you a quick description of some of my favourites. Radioactive cuts to a white screen and then fades into the next picture. Overlay – pretty obvious really. Psycho Cycle – psychedelic colour cycling. Quad Anim is a form of split display for displaying anims.

This is definitely the most fun and innovative program I have used in a very long time. Apart from its abundance of effects and images, it is remarkably easy to use – you'll soon find you will be creating great videos in no time at all. It's a pain not being able to save your videos on a standard CD32, but the forthcoming CD1200 and SX1 expansion should solve this problem. AS

WHAT
Video Creator – £39.95
WHO
Almathera
WHERE
Almathera ☎ 081 687 0040

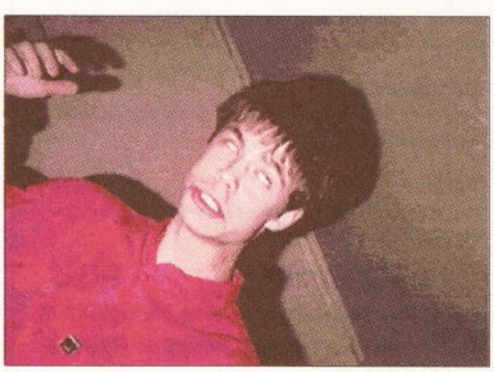
CHECKOUT
Video Creator

Documentation 87%
The documentation is clearly written and well-diagrammed.

Features 94%
There are screen-wipes and flashing effects aplenty. Almathera have also made good use of the extra space afforded by CD-ROM technology by including loads of images on the disc.

Price 85%
Video Creator represents great value for money, and gives more fun per pound than most other programs.

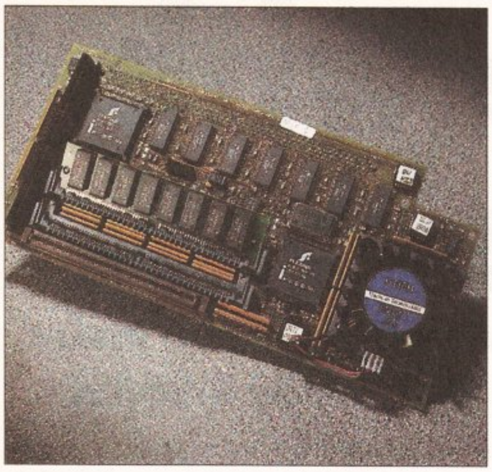
Overall 89%
This is a great implementation of an excellent idea for a good price.



Consider this a warning – if you spend too long using Video Creator you could end up like this!



You really need to see this one in motion to fully appreciate its pulsating effects.



GVP G-FORCE 040/40

Richard Baguley goes out for a run with GVP's latest (very) high end accelerator board and RAM expansion for the A4000 and A3000.

GVP's latest venture into the wonderful wide world of accelerators is the snappily titled G-Force 040 40. It's designed to fit into the CPU slot of either a 4000 or a 3000, completely replacing any CPU card that may already be fitted. It's based around a 40Mhz 68040, so it certainly doesn't hang around.

Up to 32Mb of RAM can be fitted to the board through the two SIMM slots on the board, which can cope with either 4 or 16 Mb models. This accelerator continues GVP's curious tradition of using their own unique design of SIMMs, so you can't use the more standard 72 pin variety. If you want to expand the memory even further, a RAM expansion board is available which can hold up to 96Mb, giving you a grand total of 128Mb, although you will probably have to sell your children to the slave trade to get this much.

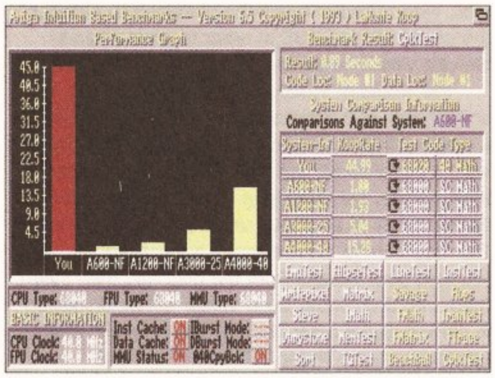
The board is pretty simple, with the only moving part being a fan over the CPU. Even with this fan, a fair amount of heat is generated, so it pays to check that there is plenty of space for ventilation around the card.

There is certainly no doubting the sheer speed of the G-Force 040 40. It's one of the fastest Amiga accelerators I've ever come across, with a speed increase of well over 100 per cent over the standard A4000/040 in most cases. In the Ray Tracing test, adding a G-Force (fitted with 4Mb of RAM) more than halved the time taken to complete the image, and there were some even bigger improvements when the render is done in trace mode, as this require many more floating point calculations, which this accelerator can do faster than you can say "Extended or Expanded memory?". This is partly due to the increased speed of the CPU (which runs at 40Mhz instead of the standard 25Mhz), but it is also helped by the improved memory access speed. The memory fitted to the card can be accessed faster than the memory on the motherboard, as this board solves a design fault of the A400 which means that memory access is sometimes rather slow.

However, there is a price to be paid. Just under £1,300. For this sort of price you could buy another A4000/030 and equip it with an FPU. For rendering 3D animations, the two machines could then be linked together by a system such as ParNet and a judicious bit of fiddling with ARexx could set up a system where the two machines could be rendering different frames from your animation. This sort of system would not give any improvement for DTP work, but for tasks which involve carrying out the same operation several times, it might be worth considering in preference to buying an accelerator such as this.

This consideration aside, this is an extremely good accelerator which could save a large amount of valuable time for the Amiga professional. But why is it so expensive? A good portion of this is probably the cost of the CPU Chip itself. Hopefully the price of this will fall with the forthcoming introduction of the 68060 (which will offer even greater performance improvements), which should drive the price of the 68040 down. Even the most power hungry Amiga users would have a hard time justifying the cost of this card. Although it pushes the Amiga to a new level of performance, I feel that the price you have to pay for getting close to light speed is excessive.

WHAT
A4000/A3000 68040 accelerator – £1,299
WHO
Great Valley Products
WHERE
Silica ☎ 081 309 1111



That tall red bar is the rating for one of the AIBB tests. The far right bar is for an A4000/040.

THE COMPETITION

Accelerators designed for the A4000 are somewhat thin on the ground at present. The only other one is the Excalibur card from Canadian manufacturers RCS. We did get one in for review, but unfortunately it failed to work, so we've had to postpone that review until next month. The Excalibur comes in two different forms, with a 25Mhz model (£499.95) which uses the CPU from the A4000/040 but improves the speed of memory access. The other model (£799) is based around a 33Mhz 68040. Expect a full review next month.

Motorola have announced that the 68060 will start shipping in quantity later this year, so hopefully we will see some accelerators using this extremely powerful Chip within the next few months. Already, several companies have announced their intentions to build accelerators for the Amiga around this Chip. AS

JARGON BUSTING

SIMM – Single In-line Memory Module. A standard way of mounting RAM Chips on a single card, making it a lot easier to install the Chips. The Turbo 1230-II uses the standard 72 pin type, but the GVP accelerator uses a special type unique to accelerators.
CPU – Central Processing Unit. The heart of your Amiga. The number at the end of the Chip name indicates which version of the Chip it is. The speed (indicated in Megahertz) determines how fast the CPU can run programs. The faster the speed, the faster programs will run.
FPU – Floating Point Unit. A Chip specially designed for carrying out complicated maths operations which involve floating point maths. This sort of calculation lies at the heart of operations such as Ray Tracing.
MMU – Memory Management Unit. A part of the CPU which controls how programs read from and write to memory. It can create virtual memory, which appears as real memory to a program but is in fact held on disk. The MMU can also be used by programs such as Enforcer or Mungwall to protect the machine from crashing if a program fails.

CHECKOUT
GVP G-FORCE 4000

Speed 97%
One of the fastest Amiga accelertors I have ever seen.

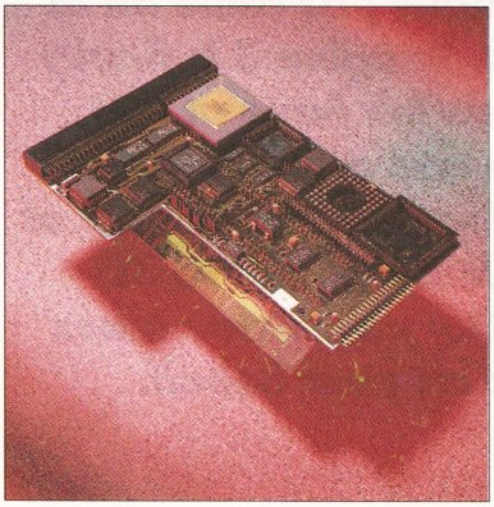
Expandability 70%
Can be expanded in terms of extra RAM and other functions.

Documentation 80%
Covers all of the functions of the cards and software in a good level of detail.

Value 60%
Regrettably, this card is excessively expensive in terms of bang for the buck.

Overall Rating 80%
Way too expensive, even though it is faster than a hungry whippet down a rabbit hole.

Blizzard 1230-II



Richard Baguley investigates this upgraded model of the popular 1230 Turbo from Phase 5.

Einstein reckoned that speed is a relative concept, and who am I to argue with one of the greatest minds of our century? Anybody who has ever done any serious Ray Tracing or DTP work will not disagree. Time goes much slower when you are waiting for an important page to redraw in *PageStream* or for the final frame of the final version of your latest ray traced masterpiece to finish.

German manufacturers Phase 5 obviously understand this frustration, but they also understand that you can cheat by accelerating your machine. To this end, they have released the Blizzard 1230 II.

There are two models of this accelerator. One (as used in this review) is based around a 50 Mhz 68030 and the other is based on a 40Mhz 680EC030. This is not only slightly slower, but also lacks a Memory Management Unit (MMU), which allows the use of virtual memory and is also used by debugging tools such as Enforcer or Mungwall.

Hardware wise, the Blizzard Turbo II looks pretty much the same as host other accelerators. The board is tidily designed, and there are no obvious trailing links or solder joins. There are two SIMM sockets on the underside of the board which can hold any SIMM with a memory capacity of between 1 and 32 Mb, giving you a theoretical maximum of 64Mb on board. I say theoretical because 32Mb SIMMS are incredibly expensive and difficult to get hold of. Two of them would probably cost you more than the A1200 and accelerator put together. Anyway, the SIMMS are the standard 72 pin 32-bit type, so there should be no problem getting hold of them.

An FPU can be fitted to the board, and provision for both a PLCC (Plastic Leadless Chip Carrier) and PGA (Pin Gate Array) type Chips. The FPU can run at either the same speed as the CPU or faster, although you will need to add an extra crystal if you choose the latter. Running an FPU at a slower speed than the CPU is possible, but Motorola and Phase 5 don't recommend it.

There are also two expansion ports on the card. One of these is designed to take a SCSI II interface, and this will cost £89.95. This was not fitted to the review model. The other expansion port is a general purpose one, and Phase 5 have plans for a variety of units, including RAM expansions. None of these are yet in production.

The board fits into the trapdoor slot on the bottom of the machine, which means the CPU is resting against the plastic cover. Given that the CPU is running at 50Mhz, it's not surprising that it gets pretty hot. However, our review model was left running for several days and it does not get excessively hot, although the desk below it did get fairly warm.

In use, the 1230-II Turbo is extremely good. In fact, an A1200 fitted with it beat an A4000/040 in some of our tests by a pretty significant margin, thanks to the sheer number crunching power of the 50 Mhz 68030. As the review model was not fitted with an FPU, it was rather far behind on the tests involving floating point maths, but fitting a 50 Mhz 68882 FPU should give a machine that could give most others a serious bit of competition.

In terms of bang for the buck, this accelerator stands up very well against the competition. It is more expensive than the Viper, but it is also much faster, as it's based around a faster CPU (50Mhz as a pose to 28Mhz). It's also more expensive than the Microbotics MBX1230XA, although this dies not have the expansion capabilities of the 1230-II. If adding a SCSI interface to your A1200 is important to you, this accelerator is well worth considering. AS

CHECKOUT
Blizzard 1230-II

Speed — **90%**
An extremely fast accelerator which pushes the A1200 about as far as it's possible to take it.

Expandability — **85%**
The ability to add a SCSI II interface would be extremely useful for some users. Other add-on options may be coming shortly.

Value — **85%**
Compares well with the other accelerators on the market, although it is not the cheapest.

Overall Rating — **89%**
A very solid and reliable accelerator with good expansion possibilities.

WHAT
A1200 68030 Accelerator
– £244.95 (40Mhz, 0Mb RAM)
– £329.95 (50Mhz, 0Mb RAM)
4Mb of RAM – £149.95
SCSI II interface – £89.95
WHO
Phase 5 Digital products
WHERE
Gordon Harwood Computers
☎ 0773 836781

Speed Tests

In order to work out what sort of speed increases you could expect from both of the accelerators, we set up several tests using commonly used programs. These tests were designed to measure the increase in speed which you can expect in a variety of everyday situations instead of relying purely on benchmarks.

	A1200	Blizzard[1]	A4000/040	G-Force[2]
ImageFX Fill[3]	N/A*	42	36	21
Imagine[4] Render	N/A*	477	289	123
ProVector[5] Redraw	5	2	2	1
AIBB Tests[6]				
Graphics	1	2.34	3.16	3.68
Integer	1	4.72	3.83	10.19
Floating	1	4.75	15.28	24.79

* Test not carried out due to lack of memory.

1 – Based on a 68030 running at 50Mhz with 4Mb of memory but no FPU.

2 – Based on a 68040 running at 40Mhz with 4Mb of memory.

3 – The time (in seconds) to do a full screen radial fill box on a 640 by 256 screen in Version 1.5 of ImageFx.

4 – The time (in seconds) to render an *Imagine 3* scene which included several algorithmic textures.

5 – The time (in seconds) to redraw a complex structured drawing in *ProVector 2.1*

6 – Amiga Intuition Based Benchmark (AIBB) is a program which carries out a series of tests to determine the speed of the machine. The figure given is how much faster in each category each of the machines is than an unexpanded A1200.

Animation Stunners



Two 'new' 3D animation packages have just come on to the market. Imagine 3 is finally out and NewTek have at last seen sense and are shortly to release a Toaster-free version of their excellent LightWave 3D program. Gary Whiteley takes a first look on your behalf.

LIGHTWAVE 3D STAND-ALONE

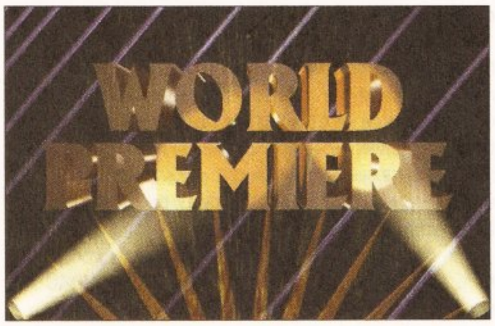
NewTek's Video Toaster comes complete with a whole load of dedicated software, including a marvellous 3D modelling, rendering and animation program called *LightWave 3D*. The real trouble is that this software is practically useless without the Toaster, which acts as an expensive dongle if you only want to use *LightWave 3D* – especially as it doesn't work with the PAL TV standard as used in the UK. Nevertheless, the power of the Toaster – and *LightWave 3D* in particular – was still an enormous draw for PAL animators looking for powerful, cost-effective software to rival Autodesk's *3D Studio* on the PC and top-end software on the extremely respected Silicon Graphics' platforms.

Accordingly, a number of switched-on PAL animators realised that *LightWave 3D* was a good thing and bought Toasters so that they could reap the benefits. Then Warm and Fuzzy Logic made their own Toaster-emulating *LightRave* dongle so that *LightWave 3D* could be run without a Toaster. However, *LightRave* itself was pretty soon hacked, meaning that the latest versions of *LightWave 3D* could be run without any dongles at all!

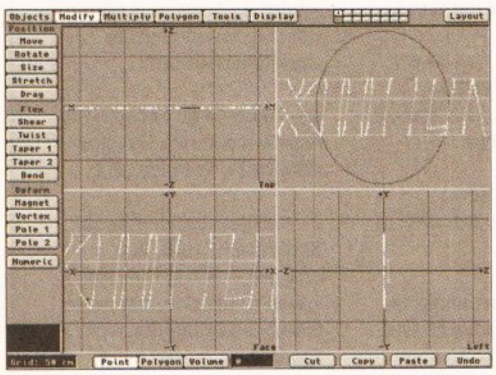
NewTek were understandably extremely distressed by all this and, since there was obviously a great demand for their products that they were so miserably failing to capitalise on, at last decided to release a stand-alone version of *LightWave 3D* which could work in both PAL and NTSC resolutions with any suitable Amiga – including A1200s. NewTek have decided to release the stand-alone *LightWave 3D* now because they didn't consider that previous versions were quite up to the rigours of full, stand-alone release and that there weren't enough solid features in these versions to justify the cost to the end-user.

So what's new then? Well, basically not a whole lot, because the stand-alone version is pretty much the same as *LightWave 3D v3.1*, which is part of the current Video Toaster line-up, although I'm told that the stand-alone version will be v3.2 and that the main difference between it and it's predecessor is that (apart from working with any Amiga which has a hard drive, at least 8Mb RAM and Workbench 2.04) there have been some small changes made to the interfaces and that user-definable resolutions of up to 16000 x 16000 pixels will be available.

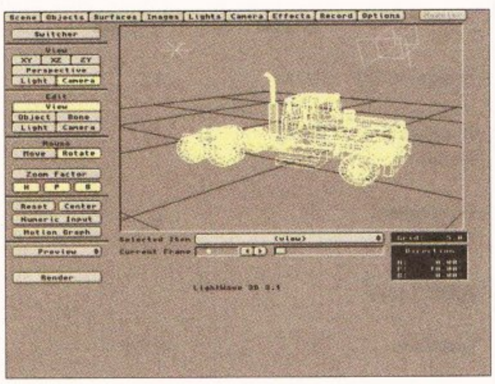
This last point is extremely significant because it makes possible the rendering of large images for poster work, HDTV or even IMAX use, as well as



LightWave's output is extremely impressive to say the least and, with its support for particle systems and special lighting effects, images such as this are there for the taking.



And with LightWave's Modeller you have all the tools necessary to build your own objects from scratch – including importing any PostScript fonts you might have handy.



The LightWave 3D software from MewTek has always had one of the absolutely best stage management interfaces, making keyframe animation extremely easy.

WHO WHAT WHERE

***LightWave 3D* stand-alone – $695**
Expected UK price around £500.

Due for release on June 15th.
UK distributor to be announced.

For further information contact:
NewTek, 1200 SW Executive Drive, Topeka, Kansas, 66615, USA
☎ 0101 913 228 8000.

recording to film. Oh yes, and the software will be protected with what NewTek believe to be a fully secure dongle.

All of *LightWave 3D's* standard features are present – including spline-based key framing for motion paths, easy scene manipulation, skeletal deformation ('Bones'), surface mapping, lens flares, anti-aliaising, motion blurs, and all of Modeller's object creation functions – from support for Postscript fonts to spline curve modelling and Boo\lean operations. New, updated, manuals will be made available to registered owners as and when they are completed.

But it's not all great news unfortunately. At the moment the only 24-bit graphics card supported by the stand-alone *LightWave 3D* is Picasso II, which is extremely bad news if you own any other card. This doesn't mean that you won't be able to see *LightWave 3D's* images on other cards – on the contrary, because any card that supports 24-bit images can display *LightWave 3D's* IFF file output – it will just be a little awkward, that's all. But NewTek are actively encouraging anyone who wants to write drivers for other cards to get in touch with them for programmer support.

The HAM-8 animation playback system used in the Toaster 4000 (that's a Toaster with *LightWave 3D 3.0* or *3.1* fitted in an Amiga 4000) has been replaced with an animation compiler and viewer program which will probably be Tom Krehbiel's *Rend24* shareware program, though this was unconfirmed at the time of going to press. But these are after all only very small worries when compared to the enormous potential of *LightWave 3D* itself. *LightWave 3D* is the software used in countless US TV productions, some of which we've started to see over here in the UK. We've already had *SeaQuest DSV* and *Star Trek: TNG* – *Babylon 5* is now showing and the next major *LightWave 3D* production to hit our small screens will be *Robocop: The Series* which, by all accounts, is just fabulous. *LightWave 3D* is being constantly updated and both NewTek and Allen Hastings (*LightWave's* excellent programmer) work closely with top film and video people to ensure that *LightWave 3D* does what they want it to do, at a realistic price.

By the time you read this the stand-alone version of *LightWave 3D* should be available – in both PAL and NTSC versions. Expect to see great things from it on a TV or monitor near you soon. Keep your eyes peeled for a full review of *Lightwave 3D stand-alone* in the next issue.

At the time of writing, no UK distributor has been announced, and Newtek have not set a UK price. However, several dealers we spoke to expected it to cost somewhere in the region of £500-550, although some dealers are hoping to sell it for less than £500.

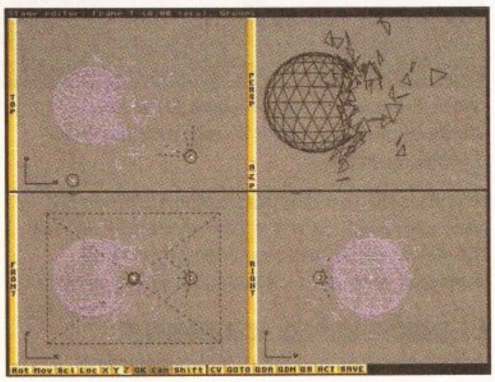
IMAGINE 3 at long last

It's been a *very* long wait, but now Minnesota's finest, Impulse Inc., have finally shipped *Imagine 3* – around 18 months after we were first told to expect it! So why has *Imagine 3* taken so long to get out of the door? Is it because a whole host of new features have been added? Is it because known bugs were being fixed? Is it because the PC version (or the Amiga version) was holding Impulse's release dates back? Who can tell? Anyway, it's safe to say that *Imagine 3* has been eagerly awaited by everyone who has used previous versions.

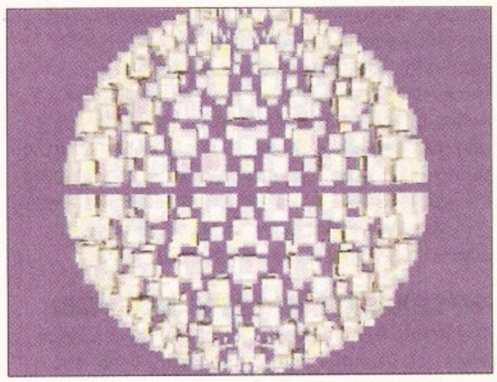
So when *Imagine 3* dropped through my door last week I had no choice but to get out of bed, get some coffee and install it on my hard drive so that I could give you a taste of some of the new stuff that this long-awaited program contains. *Imagine 3* has a number of major new features.

Here is a selection of the ones I found the most important:

- States
- Bones
- Particles
- Spline Editor
- Better editing windows
- Improved lighting and camera functions
- Around 100 built-in textures
- Brand new manual
- Plus a load of other important changes and additions, including faster rendering, improved anti-aliaising, deformations, more effects, an improved Action Editor with extra options, a new 3D editing mode for the Detail Editor and a better quad-view Preview window with user-definable Angles, Zoom and Perspective settings which make viewing an object much easier.



Particles replace an object's faces with new solids which can be affected by wind, gravity and other effects. They only become...



... fully visible when rendered. You should be able to note the new visible camera and light forms in the wireframe view.

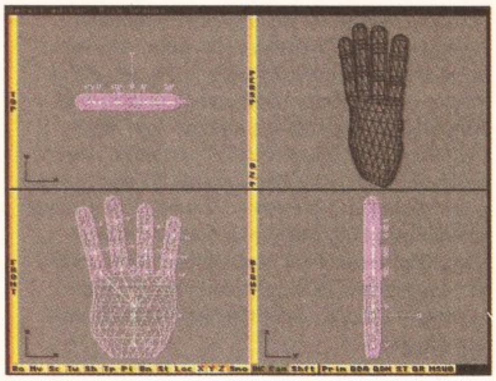
Unfortunately there are also some bugs which still need fixing – like the old (and well known) Slice problem, and some new ones – like fonts no longer loading correctly into the Detail Editor. So let's take a look at the big changes one by one:

SIMPLIFYING STATES

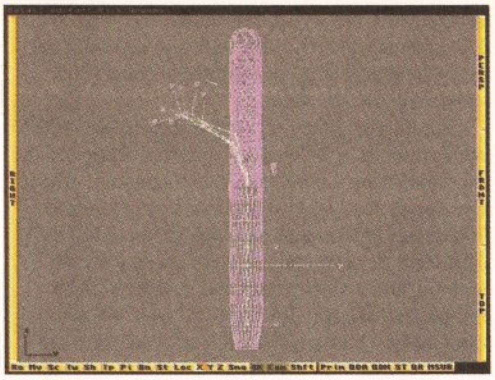
In *Imagine 2,* if you wanted to have a multi-part object and do something interesting like walking, you either had to make a whole set of keyframe objects and morph them from one to the next over time or take the trickier path of building a Cycle object. Well, I'm glad to say that the Cycle editor is now almost redundant and has been replaced by States, which essentially record variations in an object's shape and form and save all the information along with the object. To move from one State to another is simple – just add the object to the action editor and specify the name of the State that you wish to recall. For example, a grouped object could have several moving parts which can be manipulated into several key positions. Each position can be saved as a named State and each State can later be recalled in the Action Editor so as to smoothly animate the object between each of the chosen States. States are great! And they're really not too difficult to use either. Can't get better than that!

BEAUTIFUL BONES

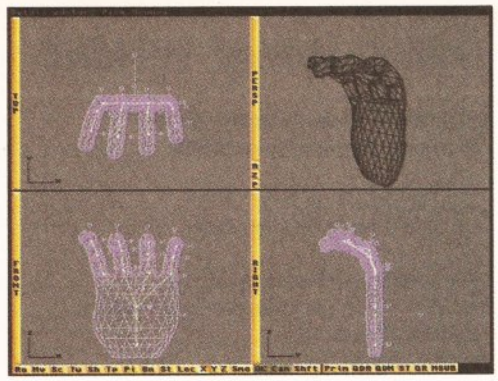
Bones are axes which can be told to move and rotate in relation to each other and the object to which they are assigned, and consequently smoothly stretch or compress the surface of the object at the same time as adjusting its position. A good example is the supplied hand object which



Bones are hierarchically-grouped axes brilliantly joined to an object which can, if you so wish,...



... be used with States to amazingly smoothly manipulate an object into new positions,...



... then render seamless animations as the object moves into each new pose.

has an axis to represent each bone in the fingers of a human hand. Notice that the hand itself is a single object and that the axes are grouped hierarchically – with the extremity bones being connected down through the knuckles to the body of the hand itself.

By setting different States and positions for the bones, and saving the resulting object/s, more-natural looking animations can be produced – at the expense of some fiddly preparation and a tough learning curve. But I think that the inclusion of Bones *is* a very good thing which most of you will find very handy.

PECULIAR PARTICLES

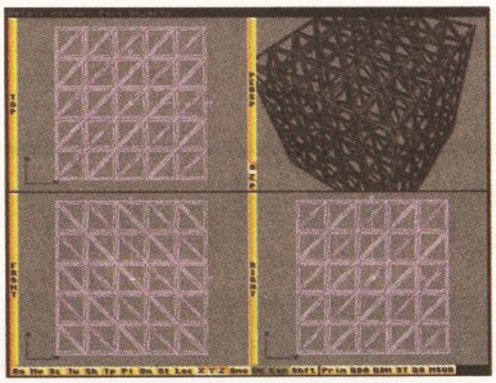
Particles are a slightly strange concept in that you can't see them until they are rendered. What happens is that you make an object – say a multifaceted cube – and then 'particularise' it. Suddenly all the original triangular faces are replaced by solids of your choosing – be they cubes, spheres or any of several other available shapes. Then, when the object is rendered, only the new particles are drawn, giving the object a completely new appearance. The particles themselves can be further manipulated in the Action Editor, where effects such as gravity, wind and spin can all be brought to bear to animate the particles into some kind of motion. At the moment I've got little idea as to the practical applications of particles beyond breaking an object to bits, but with a little work I should soon figure it out.

SPLENDID SPLINE EDITOR

The Spline Editor is where you load in PostScript fonts and give them bevels and extrusions. The result – smooth-edged text which looks wonderful. Splines can also be used to make 2D extrusion shapes, but full 3D spline modelling is not yet implemented. However, the smoothness of spline-based fonts is a great start.

EASY EDITING WINDOWS

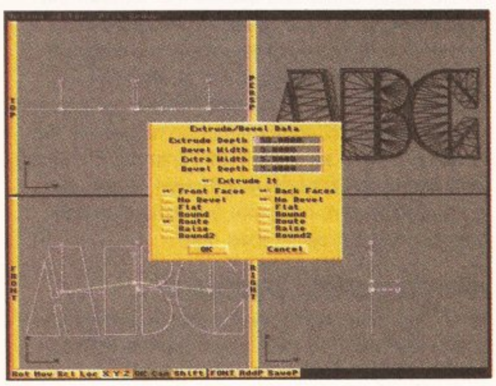
The best addition to the edit windows are the new Preview controls for viewing objects in the Perspective quad view. No longer bound by the camera view, it is possible to manually rotate, zoom or alter the perspective of the view before you test animate or quickrender it, making modelling and pre-render testing much easier. And with the NewMode view in the Detail Editor it is now possible to manipulate an object's points, lines and faces directly in the Perspective window. The Action Editor has also been significantly revamped, with more choices and easier access.



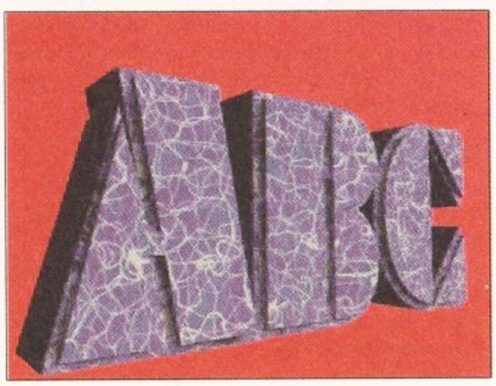
Want to make an object which looks like it is made of girders? Now it's easy with the new Lattice function.

LIGHTS AND CAMERA

Placing cameras and lights was previously a tedious hit-and-miss affair, but now that lines have been added to show the areas covered by both camera and lights, and coupled with a real-time quad preview, it is now much easier to put everything where you want it.



Splines produce smooth curves. Imagine 3's Spline Editor can load PostScript fonts and extrude and bevel them, as well as be...



... used to make simple, but stunning, 3D forms. The rendered images speak for themselves – this one uses the new Mosaic texture.

TERRIFIC TEXTURES

As if to challenge Apex Software's *Essence Textures*, Impulse have decided to implement a whole set of mathematical surface textures of their own. There are now around one hundred new textures included with *Imagine*, and I must admit that, even as an *Essence* fan, some of them are extremely good.

MASTERFUL MANUAL

One of the greatest criticisms of *Imagine 2* was its poorly-written manual. Impulse have attempted to redress this by commissioning the manual from an external source, and by and large this manual is much better than the previous one. It does have its problems though, mainly that the new features are often described only in the most cursory way. A good example of this is how to use the Bones functions. It took me several re-reads and a good deal of thinking to get to grips with how to actually make bones and get them working. For such complex new features I would have expected more than the six pages of half-baked tutorial on offer – and this goes for other functions too.

So, all in all, the new manual is good, but it's not *that* good.In (brief) conclusion, I have to say that *Imagine 3* has come on a long way from its predecessor, though there's still a lot to do if Impulse want to keep up with the *LightWaves* and *Real 3Ds* of the Amiga rendering world. The addition of collision detection, true kinematics and full spline modelling will go a long way towards this. See next month's issue for a full review with comments and tips from professional users. AS

WHO WHAT WHERE

IMAGINE 3

Created by:
Impulse Inc., 8416 Xerxes Ave. North, Minneapolis, MN 55444, USA
☎ 0101 612-425-0557.
Upgrade paths also available.

Distributed by:
Amiga Format magazine – £95
(you *must* have the original form found in the back issues 53, 54 or 55). If you don't already have these issues, you can order one by ringing Future Publishing ☎ 0225 822 511

Emerald Creative Technology – £89.95 + £3.50 postage ☎ 081 715 8866

QUALITY PERIPHERALS FOR THE AMIGA

AMITEK

FRIENDLY TECHNOLOGY

Designed to bring you high quality and performance at affordable prices, AmiTek peripherals offer outstanding value-for-money. They are built to ensure easy fitting and trouble free operation - making them a pleasure to use. AmiTek products are also thoroughly tested and very reliable, so reliable that we are pleased to offer a full two year warranty on the AmiTek products detailed here.

RAM UPGRADES

FOR A500/A500PLUS/A600 - 2YR WARRANTY

CODE	DESCRIPTION	INC VAT
RAM 0505	A500 - 512K (No Clock)	£20
RAM 0510	A500 - 512K (With Clock)	£25
RAM 0520	A500PLUS - 1Mb RAM	£30
RAM 0605	A600 - 1Mb (No Clock)	£30
RAM 0610	A600 - 1Mb (With Clock)	£40

PCMCIA CARDS

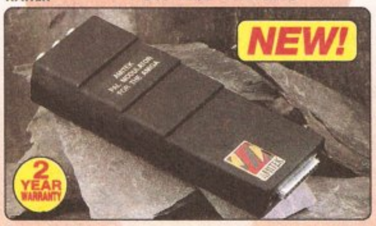
FOR AMIGA 600/1200 - 2YR WARRANTY

CODE	DESCRIPTION	INC VAT
RAM 6020	A600/1200 - 2Mb Card	£119
RAM 6040	A600/1200 - 4Mb Card	£179

MODULATOR

FOR ALL AMIGAS

NEW!



2 YEAR WARRANTY

The AmiTek External Modulator makes an ideal replacement modulator for all Amiga owners. Everything needed is supplied. Like all AmiTek peripherals, it comes with an easy to follow manual.

- User friendly manual included
- High quality design
- FREE RF cable supplied

MODULATOR **£34** INC VAT - MOA 4200

HAWK RAM UPGRADE & MATHS ACCELERATOR

FOR THE AMIGA 1200

1Mb, 2Mb, 4Mb & 8Mb RAM versions available with or without Floating Point Unit

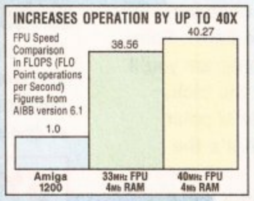
2 YEAR WARRANTY



BUILT-IN BATTERY BACKED CLOCK

Maximise the processing power of your standard A1200. Be ready for the new generation of software which makes more demands on Amiga memory and technology. The AmiTek Hawk RAM expansion includes up to 8Mb fast 32-bit RAM, the ability to support a sophisticated 68882 FPU (Floating Point Unit - drastically increases the speed of maths intensive operations) and a battery backed up clock. Built to a high standard, this board can be easily installed and comes with a 2 year warranty. The Hawk RAM board is available in 9 pre-configured versions enabling you to select the model which best suits your requirements.

INCREASES OPERATION BY UP TO 40X



- Plugs straight into A1200 trapdoor - No soldering required
- Upgradeable FAST RAM board to 1, 2, 4 or 8Mb
- Uses industry standard socketed SIMMs for easy upgrades
- Two types of optional Floating Point Unit - 33MHz or 40MHz PLCC 68882 co-processor
- Comprehensive manual with illustrations
- Works with all A1200 and A1200HD computers
- Does not invalidate your A1200 warranty
- 2 year warranty

	NO FPU	33 MHz FPU	40 MHz FPU
1 Mb RAM	£99 INC VAT - RAM 1210	£159 INC VAT - RAM 1213	-
2 Mb RAM	£139 INC VAT - RAM 1220	£199 INC VAT - RAM 1223	-
4 Mb RAM	£199 INC VAT - RAM 1240	£259 INC VAT - RAM 1243	£299 INC VAT - RAM 1244
8 Mb RAM	£399 INC VAT - RAM 1280	-	£499 INC VAT - RAM 1284

PRICES FROM ONLY

1Mb RAM, NO FPU **£99** INC VAT - RAM 1210

1Mb INTERNAL FLOPPY DRIVES

FOR AMIGA 500/500PLUS & AMIGA 600/1200

These internal AmiTek replacement drives are ideal for users who wish to replace their existing internal drive.

The packs feature a high quality internal 1Mb 3½" drive mechanism for the Amiga 500/500PLUS or Amiga 600/1200. All you need to fit your drive is included, plus easy to follow fitting instructions and 24 months warranty.



2 YEAR WARRANTY

A500/A500PLUS INTERNAL DRIVE **£44** INC VAT - DRI 3600

A600/A1200 INTERNAL DRIVE **£44** INC VAT - DRI 3605

1Mb SONY®

3½" DELUXE FLOPPY DRIVE

FOR ALL AMIGA COMPUTERS

SONY MECHANISM



2 YEAR WARRANTY

'Amitek's new disk drive combines an elegant design, high build quality and smooth performance in a very affordable package. Highly recommended'. Jason Holborn - Leading Amiga Journalist

DELUXE FEATURES

The AmiTek drive has been specially designed to meet the needs of Amiga users and has many deluxe features which are not included in other drives - check out the competition!

ANTI-CLICK

The anti-click feature stops your drive from making lengthy whirs and clicks that occur when the drive is empty and searching for a disk.

ANTI-VIRUS

The switchable Anti-Virus mode stops track 0 viruses infecting the disk while in the drive. Yet, unlike many other drives which have virus killers, this Anti-Virus mode can be disabled, allowing some fussy copy protected software to run.

ADD ADDITIONAL DRIVES

As a double sided mechanism, the AmiTek drive gives 880K of disk space after formatting. It is also daisy-chainable, which means that you may add further drives to your system and, uses very little power from your Amiga.

HIGH QUALITY SONY MECHANISM

AmiTek took the time to source a mechanism that has all the features, quality and reliability that Amiga owners have been crying out for. After vigorously testing Sony's mechanism, it proved to be the best by far available.

Details taken from models available MARCH '94	ANTI-CLICK	ANTI-VIRUS	ROBUST STEEL CASE	QUALITY SONY MECHANISM	TOP RATED CU-AMIGA MAY '94 90%	2 YEAR WARRANTY
AMITEK	✓	✓	✓	✓	✓	✓
CUMANA	–	–	–	–	–	–
ZAPPO	–	–	✓	–	–	–

- HIGH QUALITY 3½" SONY MECHANISM
- STRONG METAL CASING
- BUILT-IN ANTI-CLICK FEATURE
- SWITCHABLE ANTI-VIRUS MODE
- ENABLE/DISABLE SWITCH
- 75MS ACCESS TIME
- DAISY CHAINABLE VIA THRU PORT
- LOW POWER USAGE
- NO NEED FOR EXTERNAL PSU
- 2 YEAR WARRANTY

EXTERNAL DRIVE **£59** INC VAT - DRI 1159

THE SILICA SERVICE

1978 SILICA 1993 15 YEARS SERVICE TO YOU

Before you decide when to buy your new Amiga products, we suggest you think very carefully about WHERE you buy them. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or help and advice. And, will the company you buy from contact you with details of new products? At Silica, we ensure that you will have nothing to worry about. With our unrivalled experience and expertise, we can meet our customers' requirements with an understanding which is second to none. Complete and return the coupon now for our latest FREE literature and begin to experience the "Silica Service".

- **FREE OVERNIGHT DELIVERY:** On all hardware orders shipped in the UK mainland (there is a small charge for Saturday delivery).
- **TECHNICAL SUPPORT HELPLINE:** A team of technical experts will be at your service.
- **PRICE MATCH:** We match competitors on a "Same product - Same price" basis.
- **ESTABLISHED 15 YEARS:** We have a proven track record in professional computer sales.
- **PART OF A £50M A YEAR COMPANY:** With over 200 staff - We are solid, reliable and profitable.
- **BUSINESS + EDUCATION + GOVERNMENT:** Volume discounts are available. Tel: 081-308 0888.
- **SHOWROOMS:** We have demonstration facilities at all our stores.
- **THE FULL STOCK RANGE:** All of your computer requirements are available from one specialist supplier.
- **FREE CATALOGUES:** Will be mailed to you, with special reduced price offers, as well as details on all software and peripherals.
- **PAYMENT:** We accept most major credit cards, cash, cheque or monthly terms (APR 29.8% - written quotes on request).

SILICA

SILICA IS A DIVISION OF PROCOM PLC 11001305-4

MAIL ORDER

PLUS TECHNICAL AND HEAD OFFICE

081-309 1111

1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

PLUS BRANCHES AT:

BRISTOL	Debenhams - (3rd Floor), St James Barton	0272 291021
CHELMSFORD	Debenhams - (2nd Floor), 27 High Street	0245 355511
CROYDON	Debenhams - (2nd Floor), 11-31 North End	081-688 4455
GLASGOW	Debenhams - (5th Floor), 97 Argyle Street	041-221 0088
GUILDFORD	Debenhams - (3rd Floor), Millbrook	0483 301300
HULL	Debenhams - (2nd Floor), Prospect Street	0482 25151
IPSWICH	Debenhams - (2nd Floor), Westgate Street	0473 221313
LONDON	52 Tottenham Court Road	071-580 4000
LONDON	Debenhams - (3rd Floor), 334 Oxford St	071-493 3735
LONDON	Selfridges - (Basement Arena), 369 Oxford St	071-629 1234
LUTON	Debenhams - (1st Floor), Arndale Centre	0582 21201
MANCHESTER	Debenhams - (3rd Floor), Market Street	061-832 8666
PLYMOUTH	Debenhams - (3rd Floor), Royal Parade	0752 266666
SHEFFIELD	Debenhams (3rd Floor), The Moor	0742 768611
SIDCUP	1-4 The Mews, Hatherley Road	081-302 8811
SOUTHAMPTON	Debenhams - (1st Floor), Queensway	0703 223888
SOUTHEND	Keddies - (2nd Floor), High Street	0702 468039

To: Silica, AMSHP-0894-213, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND ME AN AMIGA CATALOGUE

Mr/Mrs/Miss/Ms: .... Initials: ....

Surname: ....

Company (if applicable): ....

Address: ....

Postcode: ....

Tel (Home): ....

Tel (Work): ....

Which computer(s), if any, do you own?

.... 213C

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

Twinkle twinkle...

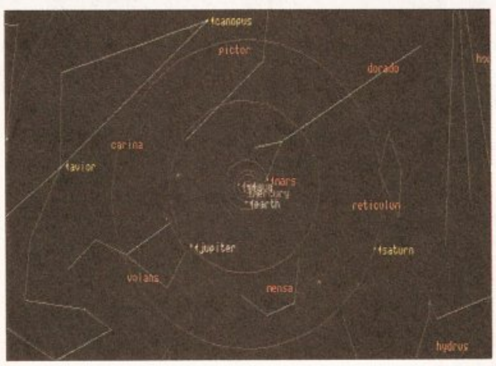
Cliff Ramshaw comes over all starry-eyed as he takes a look at Distant Suns 5, the latest incarnation of the universe simulator from VRL.

Don't know about you, but ever since childhood if late one night I happen to be walking home away from the lights of the city and look up at a clear night sky, I'm always gob-smacked by the beauty of it. The creators of *Distant Suns*, the Virtual Reality Laboratories (VRL), must feel the same way. As stated in the manual, it's the product of "several years worth of spare time". You shouldn't conclude from this that we're dealing with a package that's not of commercial quality, though. It's far superior, say, to the PD package *Dynamic Skies* (Virus Free V1265), but it does lack the polish of the Amiga's very best programs.

Distant Suns is a desktop planetarium, providing a simulated view of the night sky. This doesn't just include stars and planets, but also asteroids, comets and 'deep sky objects', or galaxies and nebule. The program's viewpoint can be varied throughout both time and space. Viewing from the Earth can be done in one of two ways: in a local, or equatorial frame. In the case of a local frame, you specify a location on the Earth's surface – either by choosing from an extensive list of cities, or by entering specific longitude and latitude coordinates – and the screen displays the sky as it would appear from that location. If you view in equatorial mode, you're conceptually at the Earth's centre, looking in whichever direction you specify. Once you introduce the dimension of time, the difference between the two becomes marked. As the Earth rotates in time, the stars appear to move to the observer on a point on its surface; but they are stationary for an observer at the centre of the Earth, who is looking in an 'absolute' direction.

You can vary the angle of the view that is displayed. If you narrow the viewing angle you effectively zoom in on a smaller area of the screen. This doesn't bring fainter stars into view, though – it's not magnification in the telescopic sense. Fainter stars can be displayed, though. To do so, you have to load in one of two Extended Star catalogues, containing details of many more, fainter stars than are known to the rest of *Distant Suns*. These catalogues are NASA's *SkyMap* and the *Hubble Guide Star Catalogue*. Unfortunately, only tiny portions of each of these are included as standard. The full catalogues are available separately, direct from VRL.

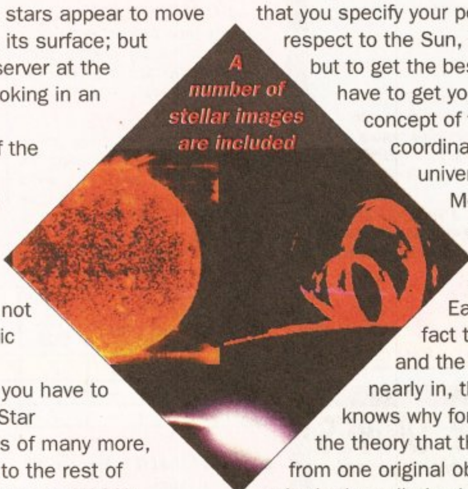
You don't have to be observing from the Earth, though. A quick menu selection and you can view things from one of many objects in the solar system. Or you can take a view from 'above' the ecliptic, looking down on the Sun, with all the planets orbiting in ellipses around it. This has only three scales, showing just the inner planets, the middle and inner, or all of them.



You're not confined to terrestrial views. This one is from above the plane of the ecliptic, looking down, and shows the middle and inner planets.

There's also the opportunity of getting a close-up of any of the planets. Just choose one, then select from a number of preset distances and angles, and there you are – hovering before it. The rendering of the planets is fairly crude, so I can't imagine the trip to the planets being a regular one.

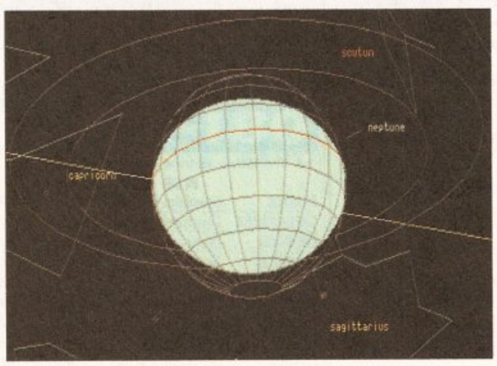
A more versatile view can be gained by switching to heliocentric coordinates. This means that you specify your position (as an observer) with respect to the Sun, rather than the Earth. Sorry, but to get the best out of this program you'll have to get your head round the tricky concept of three-dimensional polar coordinate systems. That's the universe for you!



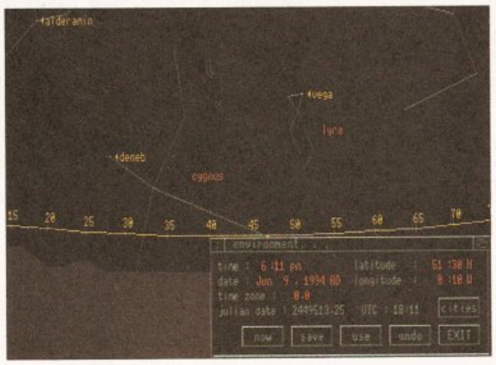
A number of stellar images are included

Most objects in the solar system exist in the plane of the ecliptic. This is the flat area which contains the Earth's orbit. It's a peculiar fact that the orbits of the planets and the asteroids are also in, or nearly in, this same flat area. Nobody knows why for sure, but it lends weight to the theory that the asteroids are all debris from one original object. Most objects aren't quite in the ecliptic plane, though, so if you're viewing from any off-Earth location *Distant Suns* will, on request, draw droplines between objects and the ecliptic so you can see how far above or below it they are. It works in a similar way to the 3D radar system in the game *Elite*.

Time is *Distant Suns'* other major variable. As well as selecting the location from which you observe, you can also select the date, from a range of thousands of years, and time of day. The heavens seem to move to an Earth-bound observer, both as the Earth rotates and as it orbits the Sun. Also, the other planets (and comets, asteroids and so on) move about the Sun at different speeds, so they appear in different areas of the sky at different times. There's even more variance in the heavens than that. All the stars are moving relative to our Sun. This motion is unnoticeable on a day-to-day basis, but it's apparent on the thousands-of-years time-scales that *Distant Suns* deals with. The motion is generally divided into two parts – proper motion and radial velocity. Radial velocity is the speed at which a star is moving towards or away from (almost invariably away from, since the universe is expanding) the Earth, and doesn't concern us. Proper motion measures the visible motion of the star across the sky. You can get *Distant Suns* to draw lines through all the stars, where a line's end-points represent its position 25,000 years in the past and future. Although they're moving at a fantastic rate, the stars are so far away that the distances they move appear tiny.



One nice feature is Hover, which enables you to view a planet close up. This picture is taken from the sunward side of Neptune.

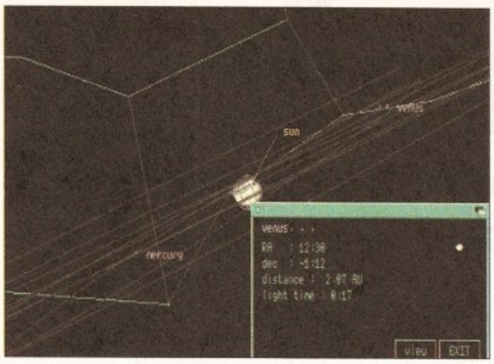


Here the view has been set to that which you'd see from London. A distinctly un-metropolitan landscape can be switched on to obscure the area of the sky that shouldn't be visible.

SYSTEM REQUIREMENTS

- AmigaDOS 2.04 or greater
- 2Mb of RAM (Must have 1Mb of Chip RAM)
- Hard Drive

A further complication to the motion situation comes in the form of something called *precession*. This is a slight 'wobble' in the Earth's orbit. The wobble repeats every 25,800 years, and because of it everything in the sky seems to wobble. The motion is so subtle you don't need to worry about it unless you're skipping more than 100 years from the current date. If you are, then you can select an option that gets the program to update the star's



Another planet can be chosen as a view point. I'm looking from Mars towards the Sun. I've clicked on Venus and its information window is displayed.

BLITS & BOBS

Scientists believe the universe has been expanding since the Big Bang, but they don't know if it will do so forever or if its gravity will eventually cause it to collapse into an infinitely small point.

positions accordingly. It's done like this because the updating is mathematically complex and takes a long time. Doing it automatically – which is how all the other motions are dealt with – would slow the program up too much.

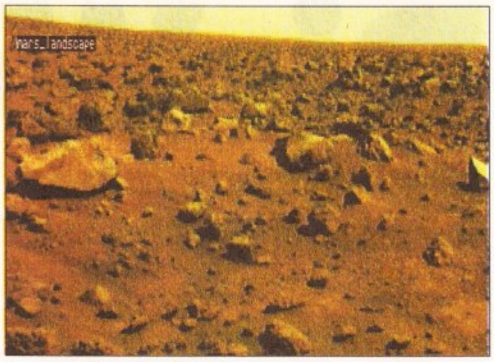
The facility in *Distant Suns* to set a particular time and, by means of its clock, to move it forwards or backwards at varying rates, means you can observe many interesting events.

You can, for instance, witness the retrograde motion of a planet. This is a phenomena that arises out of the difference in speed between the Earth's and another planet's orbits. For a short time, the planet seems to reverse its direction as it travels across the Earth's sky before righting itself again, causing a kink in the path it traces. This is just one of the scenarios that the manual explains how to set up in its tutorial section. Others include the passing of Halley's comet, solar and lunar eclipses and stellar occultations (that's a planet blocking out a star to you and me, guv).

As well as being able to observe all of these motions on your screen, you can save them out as anim files – a facility that could prove pretty handy for making multimedia presentations.

A further boon to the would-be multimedia mogul-cum-astronomer is the program's ARexx port. With it you can control *Distant Suns* from an external script. Commands exist for most of the program's functions, making it possible to incorporate it into some sort of educational exhibit. The manual also suggests the possibility of using ARexx, with *Distant Suns* as a user-interface, to control a real telescope. Imagine a real telescope that you could direct to any point of the sky with a simple mouse click...

The package can present much more information than merely the positions of objects at a given time for a given place. If you're in Information mode, you can click on an object to

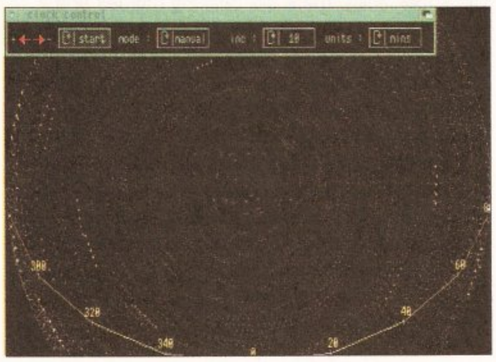


Some of the supplied images are somewhat disappointing. This martian landscape is of a distinctly low resolution.

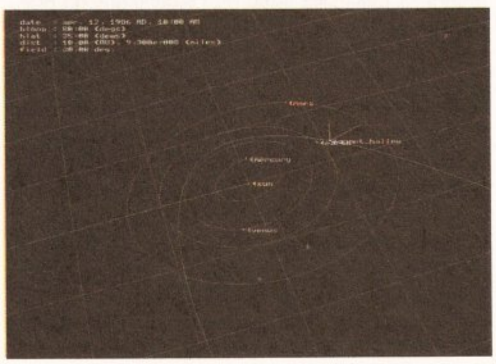
bring up a small fact-filled window for it. For the less significant objects (though significance is very subjective when we're talking about objects many times larger and older than our Sun) it contains little more than coordinate and magnitude (a measure of a star's brightness) data. Some objects, notably nebulae and galaxies, are accompanied by small pictures. A few, the planets in particular, have full (or nearly full) screen pictures, which you can click to view. These are supposedly enhanced for AGA owners, but I must say their quality isn't impressive.

You can, though, add your own pictures. The program's configurable in other ways, too. Among many other things, you can add your own objects along with their orbits in the solar system, add new stars, and even add your own tables of astronomical data.

You can decide whether or not to have each star labelled with its name – it's as well to switch this off with wide-angled views, since the display can get very cluttered. Similarly, constellations can be labelled, with lines optionally joining the stars to show their shapes. A more whimsical visual effect is produced by the Twinkle function, simulating the distorting effect of Earth's atmosphere on the stars' light (it makes them twinkle).



Manipulating the program's clock causes time to pass. Here's a view of the pole star from New York. Switch on Star Trails and you can see the circular motion of the other stars around Polaris.



Halley's comet approaching the Earth. Note its tail as a line going in the opposite direction to the Sun. Sadly, there aren't any close-ups of it.

A number of markers can be drawn on the display to help you orientate yourself. These include the ecliptic (the path the sun traverses across the sky), the equator, the horizon, a right ascension/declination grid and, when you're in Local viewing mode, an altitude line.

Although there's a very slight clunky feeling to *Distant Suns'* controls (and yes, it can be slow), they certainly provide plenty of options for moving about. You can enter your exact position, direction of observation and the time in the Environment requester, or you can zoom around manually by using arrow icons in the Toolbox. You can also set the mouse so that wherever you click becomes the new centre of the display. Even better, you can get the program to find specific objects and centre the display around them.

Distant Suns has some nice extras. It'll give you information on lunar phases and meteor showers, for example. It even has a What's Up window, which contains information about what you can expect to see in the sky at a particular time – ideal for the amateur astronomer.

There are strong links throughout the program to the real world, to the business of physically observing the skies. The manual even includes an appendix with advice on buying a telescope. It seems to me that the program is intended primarily as an aid to the practising astronomer – not so much those in observatories at the top of mountains in exotic countries, but those who like to sit out in the cold with a telescope.

I bet it's also a great education – I would have loved something like this when I was a kid – but the pictures could be better, and it would be nice to have more background information on tap. The manual suggests a number of 'experiments', and there are plenty more to be set up, where you can observe famous astronomical events and replay it all if you missed something.

The point is though, it isn't a toy. I reckon if you only had a passing interest in the stars you'd soon tire of it. Let's face it, a computer display can never rival the beauty of the night sky. This program can help you better appreciate that beauty, and that's what astronomy is all about. AS

CHECKOUT
DISTANT SUNS

Documentation **85%**
Divided into tutorial and reference sections. It explains much, but leaves plenty of room for exploration.

Features **82%**
It's got lots of them, but it'd be better with more higher-quality pictures and more textual information.

Ease of use **80%**
Navigation is excellent, but speed is a problem. There is an optimised version for FPU owners, but even then things don't exactly zip along.

Value for money **75%**
It's good value for serious users, but an expensive executive toy.

Overall 82%
A fascinating and flexible program. If the control system and graphics were improved, it would be superb.

WHAT
Distant Suns Version 5.0 – £59.95
WHO
Meridian Distribution
☎ 081 543 3500
WHERE
Virtual Reality Laboratories

DirWork2

John Kennedy takes a look at a new general purpose file manipulation utility – DirWork2.

I always feel a bit dubious about programs billed as 'general purpose utlities', as I usually like to know exactly what a program does before spending my money on it. Without a fixed description it all seems a bit like those 'become a millionaire in a week' advertisements we learn to avoid.

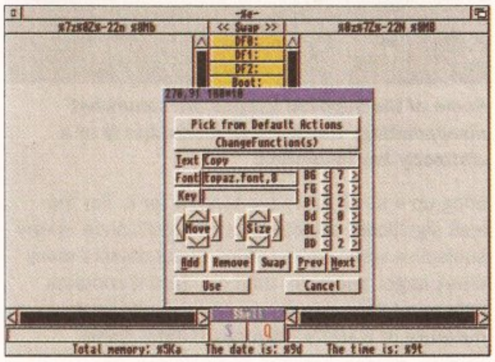
DirWork2 however, clearly started life as a general purpose *file manipulation* utility. Copying files from one draw to another using the Workbench actually gets a bit tedious after a while, and much worse, not every file has an associated icon which can launch a suitable program. For example, double-clicking on the icon of a picture created with *Deluxe Paint* will re-load *Deluxe Paint* and display the picture – a bit of an overkill when usually all that's needed is a simple utility to display the image. Likewise with a text file – chances are there will be no icon at all and therefore no default tool, in which case clicking won't do any good at all.

DirWork knows all about different file types. When *DirWork* looks at a file, it determines what sort it is and then does something sensible with it. A text file will be sent to the screen as text, a sound module played and a picture displayed – all automatically. Typically *DirWork* is set up to work with at least one list of files, and so examining an entire directory for images or sounds becomes quite an easy matter.

EXTRA FEATURES

Not wishing to stop with file handling, the author of *DirWorks* (one Chris Hames, whom you might remember from PC Task fame) has incorporated quite a few great ideas from existing Public Domain utilities.

DirWork will let you add your own programs to the Workbench menu bar and also create your own Application Icons to sit out on the Workbench, waiting for files to be dropped in. There is also an option which will report on all system hardware and software, and even a *SnoopDos* type utility which will keep track of all operating system actions – essential for diagnosing naughty programs and wayward utilities. There is even a basic virus detector included in the program – it's hard to think of any features missing...



Configuring your own set-up can take a lot of head-scratching.

CONFIGURATION

To say that *DirWork* is configurable is to make a bit of an understatement. Every possible feature of the display can be altered. We're not talking about changing some of the colours and features of the buttons, we're talking about making *DirWork* look like a dozen different programs. The example configurations are good examples of what is possible; as well as the standard Sid/Directory Opus look-alike, there are docking utilities and a full Genlock control program for mastering GVP's GLock. Perhaps most interesting of all, there is a full front end for ASDG's *Art Department Professional*, which demonstrates how a little ARexx can go a long way.

DirWork will work on practically every Amiga available. As long as you have Workbench 1.3 or above you can run *DirWork*, although some of the more advanced features require AmigaDos release 2.0 and above to work. Floppy users won't have any problems as there are no extra modules or hidden config files to contend with.

Unfortunately, perhaps as a result of this downward capability, *DirWork* looks a little sad compared to other file utilities. For some reason, even IBM clones running Windows seem to have prettier displays which is a rather sad state of affairs for machines fitted with state-of-the-art AGA technology. It's all rather grey and dispondent which is a very Thatcher-era 1980s sort of thing.

BANG, CRASH, WALLOP

Worse, something is seriously wrong somewhere. Whilst Multiview will display almost every image I send it – thanks to the various WB3.0 datatypes I'd picked up along the way – *DirWork* occasionally throws a fit when asked to show a GIF or JPEG image using the same datatypes. Even a HAM-8 picture can fox it. Sometimes the colours are garbled, sometimes rubbish appears on screen and sometimes the computer decides to reset with a Guru message. Not behaviour which recommends *DirWork* for everyday use.

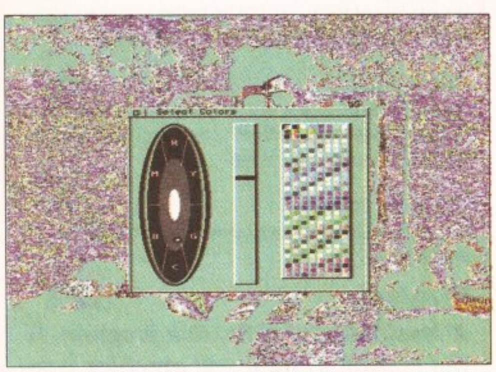
Steering clear of these irritations, there is a very powerful engine at the heart of *DirWork*. The absolute and total control over the Amiga's Operating System, combined with ARexx support, means it's possible to use *DirWork* as a programming language in its own right.

Everything is configurable and, as the example set-ups show, several different versions of the program running simultaneously can replace a dozen PD utility programs. Of course, where it all falls down is with the price. It's simply too much for a program which still needs a serious dose of DDT. For an infinitely more stable and attractive general file manipulation program, stay clear of *DirWork* and get *Directory Opus* instead. On the other hand, if you enjoy working with the Amiga's operating system at an intimate level and speak fluent ARexx, this could be the program you have been waiting for to tie all your scripts togther. AS

THE COMPETITION

The program which *DirWork* will find itself up against is *Directory Opus*, which is a little unfortunate for *DirWork*. *Opus* is such a slick and refined program that any piece of software would have a hard job looking good beside it.

It might not be as configurable, but *Directory Opus* is more stable and also comes with excellent documentation which even relative new-comers to the Amiga will be able to understand. It's also available for about £45, which makes it an essential purchase.



An all to common sight when trying to display anything other than simple IFF images.

WHAT
DirWork2 – £69.95
WHO
Chris Hames
WHERE
Meridan Distribution
☎ 081 543 3500

CHECKOUT DIRWORK2

Documentation — **75%**
Although in the form of a reasonably large ring bound manual, many beginners will be completely flumuxed when trying to use *DirWork*.

Ease of use — **70%**
Configuration can get very tricky, and this is due to nothing more than a poorly designed user interface. No one wants to type in eight digit hex numbers and obscure control strings.

Speed — **80%**
Certainly fast enough, especially on a hard drive system. The speed at which images are display will depend a lot on the datatypes used.

Quality — **65%**
Sadly lacking – at times this feels more like a public domain utility than an expensive program. Worrying level of crashes.

Price — **60%**
Too dear. Buy *Directory Opus*, raid a public domain library and learn how to use ARexx.

Overall — **65%**
A promising program let down by poor presentation, both in terms of the user interface and reliability. Advanced users will be able to work around the bugs and tailor it to answer particular needs.

Move that body!

Animating human beings is not easy. Graeme Sandiford finds out if Humanoid can make it easier.

Now don't take this personally, but when it comes to 3D-modelling, human beings can be a real pain in the neck. They have all kinds of lumpy bits and they are terribly complicated. They are even more awkward when you try to animate them. It's amazing how much we take for granted when walking or running, and how much even the tiniest of inaccuracies stand out. *Humanoid* is a collection of hierarchical 3D models that have been designed to make the creation of life-like human animations easier.

Humanoid is available for two popular 3D programs, *Imagine 2.0/3.0* and *LightWave*. The package includes four very complicated models: a man, a woman, a strong man and, once you have registered the product, a model of a child. As well as the models' motion paths (for *LightWave*), running and walking poses (for *Imagine*) are also supplied. These can be used to create realistic motions for the models. In order to simulate emotions and speech, you can use the head morph targets. There are also morph targets for the hands, which are extremely difficult to animate realistically. The objects come with gold, silver and marble brushmaps as well.

MORE POWER MR SCOTT

As with most complicated 3D graphics utilities, you do need some powerful hardware to get the most out of *Humanoid*. The manufacturers recommend that you have 8Mb of memory and an 030 or 040 CPU. If you are very patient and not overly ambitious, you may be able to get limited use out of the product using an expanded 1200. However, an accelerator is seriously recommended to get the most out of any 3D program.

The objects themselves are the result of some fantastic modelling. Each object is highly detailed, and very life-like. Each figure has been created to scale – in *LightWave* one unit equals one meter and in *Imagine* one unit equals one inch. They are already in proportion with each other; the woman is 95 per cent as tall as the man and the child 50 per cent as tall.



As well as being in proportion, each one has the same number of points and polygons. This means you can morph one figure into another, such as a child into an adult. You can also create new physiques by morphing part way between two forms – for example, you could create a muscular woman by morphing a woman with the strong man.

EXPRESS YOURSELF CLEARLY

Humanoid also employs morphing to simulate changes in expression and for mimicking speech. The package includes several morph targets for expressions such as: anger, crying, fear, grinning, smiling, surprise and stern. The changes in expression would be extremely difficult to achieve by moving the components of the face by "hand". This method also produces smoother results than if you had altered the object frame by frame.

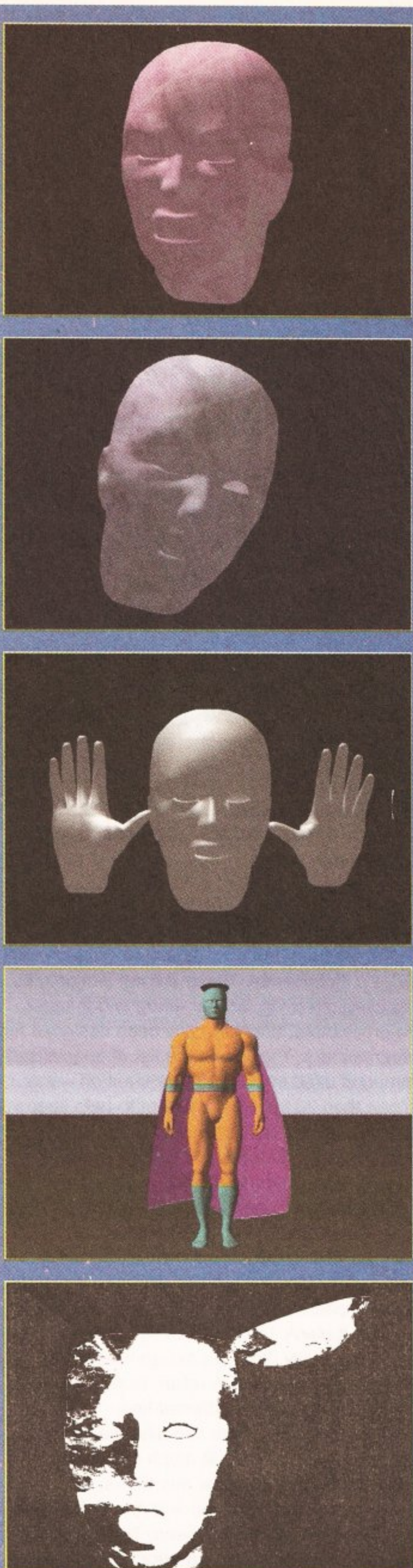
To simulate human speech there are morph targets for certain sounds,covering the sounds necessary to create words. When these sounds (phonemes) are synchronised to sampled voices, you can give a realistic impression of speech.

Morph targets are also used to control the movement of the model's hands. Once again, this would be very difficult to do by "hand". There are morph targets for several hand positions, such as handshaking, pointing and six different grips. To gain the greatest control over an action, such as catching an object, it may be necessary to morph between more than two objects.

MOVE EFFORTLESSLY

While *Humanoid's* model quality is excellent, the thing that sets it apart from other 3D-model collections is the naturalness of its motions. In the *LightWave* version of *Humanoid,* motion paths have already been saved as part of the scene. So to get a running or walking figure you just load the appropriate scene. Once you have loaded the model created, the figure appears to run on the spot. The motion is incredibly natural-looking. If you wish to create your own poses or motions you can do so by rotating an object. Although the models are impressive in themselves, they are only intended to be things to build your own models from.

Words and still images really aren't enough to adequately describe how well the humanoid models move. This product is a great feat of animation and modelling expertise, and is a worthwhile addition to the software collection of anyone who takes animation seriously. AS



While Humanoid's model quality is excellent, what sets it apart from other 3D-model collections is the naturalness of its motions.

WHAT
Humanoid – $195
WHO
Crestline Software
WHERE
Crestline Software ☎ 0101 909 338 1786

CHECKOUT
HUMANOID

Features 90%
The objects are superbly modelled and the motions supplied are incredibly realistic.

Documentation 80%
The manual does a good job of explaining how to get the best out of the product.

Price 80%
A little too pricey for weekend animators.

Overall 87%
Incredibly realistic, with almost endless possibilities.

Window Shopper

There is yet another splendid bundle of goodies from Graeme Sandiford as he presents this edition of Window Shopper.

It's so good, in fact, that you can feel quite justified in pressing your nose up against the glass in order to get a better look. We've got another book – an insider guide to Amiga disks and drives. I know it looks as if we're reviewing a book a month, but the truth is that there have been several good ones released recently. Richard Baguley will be taking at look at the Gold Fish CD-ROM as well. As if that wasn't enough, we're taking a look at Edge – a program that intends to redefine the term text editor.

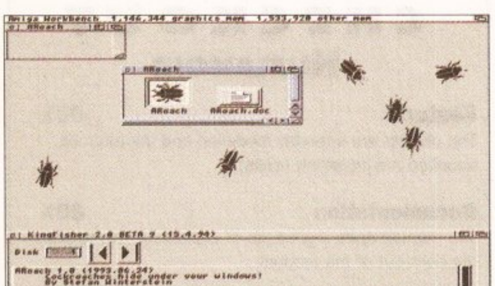
GOLD FISH

PD Soft

Fred has finally given up the floppy disks. As of now, his noted PD collection will only be available on CD-ROM, with a new update every six to eight weeks. This means that his 1,000th floppy disk is the final one in his floppy disk collection, and this set of two CDs contains every disk from 1 to 1000.

Of course, given the amount of stuff on the discs, finding what you need could be somewhat of a pain. Fortunately, there is a new version of the *Kingfisher* database program, which allows you to search through the list of programs on the disk. You can either search for a program by name or by a key phrase, such as "Benchmark, "CPU" or "Pendulous". This search is reasonably quick, but it can take a good few seconds, especially on a slower machine.

The programs in this impressive collection are stored on the CD-ROM in both ready-to-run and archived format, meaning that this disk would be very suitable for personal use or for installing on to a BBS. If you only want the archived versions of the programs, then you may be better off looking at the first in the Frozen Fish series, which will contain all 1000 disks in a compressed format. In terms of contents, this is an absolutely stunning disk, with everything from alphabetical sorting programs to Zoo de-archivers. Fred's collection has long been regarded as the best collection of Amiga PD you can get, and this is surely a "must have" for any Amiga owner with a CD drive. Thirty quid may seem quite a lot, but for over a gigabyte of seriously useful stuff, it's extremely good value.



One of the, erm, highlights of the Gold Fish CD is the Workbench hack ARoach, which gives your Amiga a nasty infestation of cockroaches.

Product:	**Gold Fish**
Price:	**£29.99**
Supplier:	**PDsoft**
Tel:	**0702 466933**

Overall rating: 95%

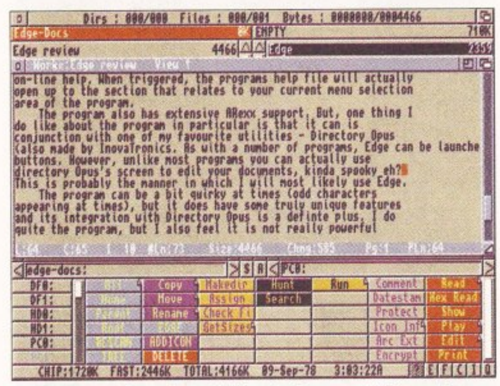
EDGE

InovaTronics

This is something of a novelty for me – I'm using a product to write its own review. Yeah, I know it sounds kind of kinky, but it is a good way to test *Edge's* features and ease-of-use.

The program has been marketed by InovaTronics as the ultimate in user-configurable text editors. If you have not used a text editor before you are probably wondering what one is, or you may be confusing it with a word processor. So what is the difference between a word processor and a text editor? The main difference between these two kinds text handling programs is the way they format text. A text editor simply loads and edits ASCII characters; these characters have no formatting information, such as whether they will be bold or underlined. Text editors also tend to have less functions as well, so we shouldn't expect too much in the way of fancy tools from *Edge*. Word processors can handle other characters other than ASCII ones – as a result they often include unwanted instructions in the files they create. These extra characters can be a real pain, especially for programmers. That's why text editors are used for writing programs and altering AmigaDOS files.

One of *Edge's* biggest selling points is its configurability. You can adapt pretty much every aspect of the program to your liking. What's more, you can save as many different configurations as you like. This can be especially useful for programmers, who often follow different formatting rules for several programming languages. However, *Edge's* configurability doesn't stop there, you can change just about any function, thanks to the program's modular design. You have the choice of either configuring the program through its built-in preference editors, recommended for beginners, or by directly editing the ASCII files that contain details of all of the programs functions.



The best thing about Edge is how well it works with Directory Opus.

One function that may appeal to programmers is *Edge's* dictionaries. These are not dictionaries for spelling-checking, as you would find in most word processors, but they have been designed for C programmers. They contain a list of specialised commands used in C and Amiga Intuition words. You can then instruct the program to help keep you from making case sensitive errors. As with the program's other features you can easily edit the dictionary through its ASCII file.

A feature that I particularly like are Bookmarks. You can mark an area of text, carry on writing or editing another section, and then return to the marked area by pushing a key. This can be useful if you are uncertain of some information, since you can leave it blank and return to fill the details quickly and easily. You can assign bookmarks to particular keys so you can return to several positions by pressing a different key.

Folds is a feature that can also make navigating a document that much easier. The manual best describes how this works; it likens a document to a scroll – if you fold it in two places you obscure the area in between. This means you can temporarily "blot out" an area of a document.

The program's windows are just as configurable as the rest of the program. You can open several windows for a single document. Once you've opened the windows, you can also instruct the program to panel them vertically and horizontally. You can even split a single window horizontally or vertically.

The program makes good use of *AmigaGuide* to provide extensive on-line help. When triggered, the program's help file will actually open up to the section that relates to your current menu selection, or the area of the program you are in.

The program also has extensive ARexx support,

and one thing I *really* like about the program, in particular, is that it can be used in conjunction with one of my favourite utilities – *Directory Opus*. As with a number of programs, *Edge* can be launched from one of *Opus'* buttons. However, unlike most programs, you can actually use *Directory Opus'* screen to edit your documents – kinda spooky eh? This is probably the manner in which I will most likely use *Edge*.

I am tempted to say that I really like *Edge* and give a whopping big score. Unfortunately, I can't – the program is by no means the ideal programmer's tool. It also has its fair share of quirks, but the thing that *really* lets it down is its price – it's far too expensive. It does have some unique features though, and, if you can afford it, it can be a very useful tool.

Product: **Edge**
Price: **$99**
Supplier : **InovaTronics**
Tel: **0101 214 340 4991**

Overall rating: **82%**

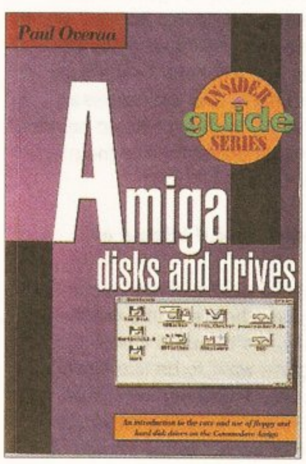
AMIGA DISKS AND DRIVES INSIDER GUIDE

Bruce Smith Books

The Amiga may be an exceptional computer, but like any PC or Mac it relies on some form of disk or drive for most of its tasks. However, these essential parts of a computer can often be taken for granted and it's not until something goes wrong that we pay them any attention.

This book, written by respected freelance journalist Paul Overaa, goes into great detail about a number of disk-related topics. At first this seems like quite a boring subject, and hardly complicated enough for a 250-page book. However, this is where Mr Overaa proves most of us wrong by jam-packing this book full of interesting stuff. There is also a disk that contains example files and useful utilities. The main topics include: software installation, file and disk operations, copying and moving files, disk repair and backup utilities, encryption and security, RAD, CD-ROMs and more.

The first chapter explains the differences between the various kinds of storage media available for the Amiga. This chapter also explains how each one actually works. It does so without being too techie, explaining things as simply as possible. The chapter describes how CD-ROM technology works and even gives a brief history of its development. It takes great care to explain the differences between types of hard drives that are



Disks and Drives is the latest addition to the Insider Guide family.

available and gives advice on the best way to get one fitted to your particular machine. The chapter explains a bit about memory-based storage devices too. It also lists their advantages and disadvantages as well.

The book also explains how AmigaDOS works in relation to disks and drives. It provides a list of several directory-related DOS commands, along with explanations on how they work and how they should be used. The chapter also explains the construction of a disk in terms of directories and trees. This gives you a clear understanding of how to navigate directories and the best way of organising your disks.

The Amiga's filesystems are flexible and extremely useful, so it's not much of a surprise that there is a chapter devoted to explaining them. This chapter also explains the different formatting options that are available. It also shows you how to use CrossDOS to gain access to files on PC-formatted disk. It explains how device drivers work and the necessity of the mountlist.

One of the fears that is most common among computer users is having their system infected by a virus. It's quite funny really – some people are terrified of computer viruses, but few of them actually know what they are, or how they can be spread. The book does a good job of explaining what viruses are, what they can do, what to do if your machine is infected, and how they can be stopped from spreading.

One of my favourite chapters is the one on encryption, perhaps because I'm a secretive kind of guy. The disk includes Amicipher which can be used to scramble text files in order to keep their contents from prying eyes. There are several examples of how to use the program included in the chapter.

Another fascinating section of the book is the one on data compression and archiving. The chapter does a good job of explaining some potentially confusing concepts.

I must say that this is a surprisingly good book. Far from being boring and full of technical terms, it explains everything in a coherent and interesting manner. We would certainly recommend it to anybody who would like to come to grips with the intricacies of storage devices without ploughing through reams of boring and confusing information.

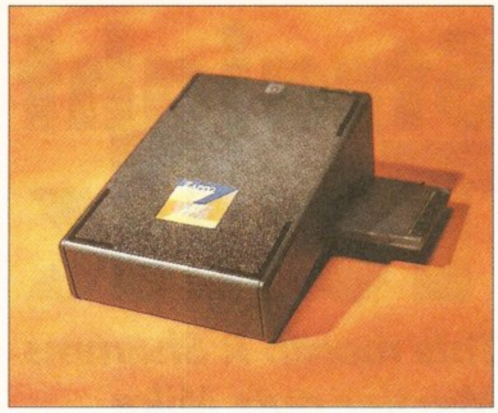
Product: **Amiga Disks and Drives Insider Guide**
Price: **£14.95**
Supplier: **Bruce Smith Books**
Tel: **(0923) 893493**

Overall Rating: **87%**

ZAPPO SMART STOR (30MB)

Indi Direct Mail

I am sorry to start this review in a negative way, but one of the things I found most annoying after buying my A1200 was that I couldn't add a hard drive without invalidating my one-year warranty. Eventually I decided to take the plunge and opened up my Amiga to add a hard drive. Then came the Overdrive – a hard disk that plugs into the 1200 or 600 via their PCMCIA slots. As you can imagine, I was kicking myself, and when I found out that these drives where faster than the one I had fitted internally, I was almost in tears. So it is with more than a little irony that I hold this Smart Stor in my



You may not believe it, but this tiny box contains 30Mb of data.

hand – a hard drive based on a similar technology as the Overdrive.

The version of Smart Stor that is on test is the 30Mb capacity drive. Currently there is also a 20Mb version, and larger capacity drives are under development. The unit itself is a tiny 11x7.5cm wedge shaped box, whose black colouring makes no attempt to blend with the Amiga's colour. In operation the drive is relatively quiet, with a barely audible high-pitched whine. The Smart Stor requires no specialised skills to install; you just plug it into the PCMCIA socket of your Amiga. The drive comes with an installation disk which contains various tools and scripts for installing system software and configuring the drive.

The AQToolbox is the program which partitions the drive and then formats it. You are given all the usual options, such as specifying the partitions size, file system, whether it should bootable, and if it should be auto-mounted as well. To install your version of Workbench you run the installation script for either the 600 or 1200. The software supplied with the drive is easy to use and has sufficient options for most people's needs.

The drive's mechanism is made by Conner and is extremely fast and has so far proved reliable. According to SysInfo, the drive has a speed of 735,670 bytes per second. Compared to my internal drive's 197,002 bytes per second, this is pretty fast. However, one thing to take into account is the drive's size. It's only a 30Mb capacity drive, so the read heads have less of a distance to travel. But benchmarks alone are not enough to give you a true impression of the drive's speed. Where I *really* noticed the speed was when I copied across my entire pictures directory, on my home machine (20Mb), to bring the images into work.

I was quite impressed with the drive and it certainly makes transferring files between PCMCIA-equipped machines much quicker and easier. Another good thing about the drive is that you can plug it in and out without having to turn off your machine. My one real complaint will probably seem obvious – the drive is just too expensive. For the same price you could by an 80Mb capacity internal drive. Let's hope that the larger drives will be a little more affordable.

Product: **Smart Stor**
Price: **£169 (30Mb) and £139 (20Mb)**
Supplier: **Indi Direct**
Tel: **(0543) 419999**

Overall Rating: **87%** AS

Straight Talk

This month R Shamms Mortier puts Mike Halvorson of Impulse Inc., creators of the first Amiga HAM painting program Prism and the wondrous Imagine, in the Amiga hot seat.

Mike Halvorson is a reporter's fantasy. There's never a dull moment, never a pause, never a need to ask a question twice (no matter how delicate the subject matter). Seven years ago Mike's company, Impulse Inc., introduced the first Amiga HAM painting program *Prism*. *Prism* beat NewTek's *Digi-Paint* to the market by about eight months as I recall.

It wasn't long after that that Impulse released the amazing *Silver* art and animation software. I still have my original copy, including the small pouch of marbles that came with it. *Silver* was responsible for the loss of many hours of sleep for myself and everyone else that owned a copy. The child of *Silver* was *Turbo Silver*, and from there came *Imagine*. Now we are at *Imagine 3.0*, so it seemed like the right time to touch base with Mike Halvorson again. Though I always prepare questions for any interview, doing so with Mike has to take in the probability that the answers will wander far afield at times, but always with a circuitous purpose. So if you can't see every response given here as pertinent to the question immediately, stay with it. You will learn a lot about Impulse, the state of computer graphics, the Amiga, and (especially) Mike Halvorson himself.

Tell me a bit about Impulse's corporate history?

We started as a part of another company in 1983. We were called "Magnify Central". We were playing with Apple Mac software, *MACpaint* to be specific. My engineer, who's been with me since he was 15, said he could make an audio digitizer for the MAC, and we made and marketed the *Magnify Audio Digitizer*. It never did much since I was unwilling to kiss ass to promote it, and we sold it in 1987 to a company that is now MacroMedia Corporation. That was about the time I got an Amiga 1000. Someone brought in the *Juggler* animation. I was excited as hell. I'm not a programmer, but I went searching for one who could do graphics and animation stuff. I found a genius – Don Sideroff. I showed him the *Juggler* on a Sunday afternoon, and he said "I can do it". Six months later he finished *Silver*, and we were in business. Also part of that original crew was Mike Demmaer and my brother Arv Halvorson. We found another guy who just got out of the Air Force and who fit right in because he had a dislike for corporate America. His name was Zac Knutson, and he later wrote our painting package *Diamond*. Zac was also the one who later wrote *Imagine*. *Diamond* never sold too well. I said to him "why not write a program that makes mountains," and he responded by authoring the *Terrain* program, which sold about 6,000 copies. He also wrote *VOREC-1*, a speech recognition package that sold about 2,500 copies, amounting to everyone in the Amiga society that has any interest in speech recognition.

Zac learned his craft from Don, who later left for MicroSoft. Don's a genius and I'd love to have him back some day. Zac, a consummate physicist, turned *Silver* into *Turbo Silver*, with a dramatic increase in rendering speed and other options. *Turbo Silver* really sold well, and drove some other companies out of the market. We built up a huge database, then we introduced the *FireCracker 24* and the *DV-1* audio digitiser. We sent out newsletters and hinted at the creation of *Imagine*. The response from Europe was voracious as far as *Imagine* went. *Imagine* was historical stuff!

Why did you go from Turbo Silver to Imagine, and what about Imagine's future?

We had to make the jump to encompass all the new features. Our byline has always been "we're listening." *Imagine* was an outgrowth of what our users were telling us they wanted, the user base really wrote it. 3.0 is the same story, and the same will be true of 4.0. All present 3D art and animation software, including ours, is too hard to use for the novice, so that's where we'll concentrate our attention in the next version. *Imagine* is a program that seduces you. The move to *Imagine 4.0* will take place in a series of upgrades. Users will be asked to pay about $100 a year, and will receive four revisions per year for that cost. The next revision will have an astounding upgrade of the Spline Editor. Our final goal is to write a piece of software that is not only loaded with functions and features, but that will be a thousand times easier to use. "Make it intuitive" will be our war cry, like a warm chair that invites you to be comfortable.

Where does that "intuitive" philosophy come from?

You shouldn't have to be a savant to use software. We need a package that allows you to create computer art in 15 minutes or less. It must be like 3D playdough. We will make texture mapping much easier; two clicks and you're done. There will be a hidden bridge between the user and the final result. Professionals will be able to do stuff in seconds instead of days. That's where all 3D software has to go. We are all designing the playgrounds for twenty-first century virtual reality. We want to be the best playground maker. In three years, we will all be operating with 1000MHz machines, and the software has to keep pace. If there is an alien intelligence on the planet, they live in Hollywood. They set us up for the technology to come. I'm not a futurist, I'm a pragmatist. Things today and tomorrow are different in degree, not in concept. The real future we need to talk about is 10,000 years from now.

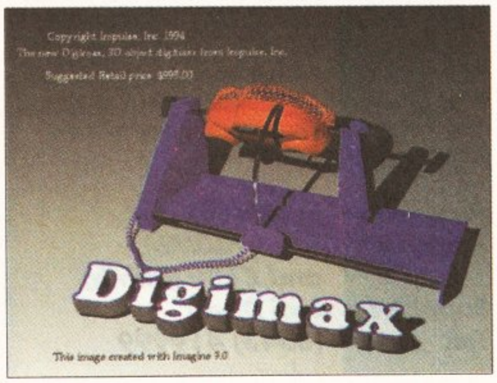
What else can you say about computers, the Amiga included?

Commodore sold a computer that was old two days after they marketed it, and that goes for all of the other platforms as well. There is the ingenuity to do things now that are beyond the dreams we all think we have. Computers are going to get very very much faster. They will be able to address all of the diseases known to humanity. As for some "Big Brother" government, there is and will be none. Commerce is greater than governments. We are all in the process of patterning reality step by step. People need to learn more about everything. Programs like Imagine will help people learn. The future is patterned by where and how people will make money. We are not like that, but it's the truth. I don't know if that's bad or good. Every religion says "God made man in his image." We're just fulfiling our destiny, becoming who we are. Computers are a tool that will help. Technology advances with major efforts and the necessary funding, and is motivated by the vocalised needs of the populace. Computers can eliminate the major cultural evil disease.

What about the fantasised 4.0 release of Imagine?

4.0 will open the door to easier visualisation all the way around, and will be a bridge to the creation of personal virtual reality. We're out to create the most beautiful thing. We want to be like flowers, chocolate brownies, sex. We're not into "feature wars". You can't do with a racecar what you can with a truck. Get one of each. People should be

"If someone gave you a billion dollars, could you have wasted it like Commodore did?"



This is a rendering of Impulse's new 3D digitiser – a new addition to the creative Amiga environment.

open minded and play with all the toys. Don't get too serious about this stuff – have fun. Computers are a miracle. We're out to give people a taste of what is possible.

What about the continual struggle to produce better documentation for the software?

I don't get to spend as much time as I want to learning the software. I just lean over and ask the engineer who designed the tool. The average customer has a manual. I learned to drive a car by doing it, not with a book. Manuals get in the way. Too many buttons on the interface also make little sense. There are words in *Imagine* that are still too mysterious. All tutorials should be simpler. *Imagine 4.0* is going to break new ground in this direction. This will be a new dreamscape. There is a "master tendency" going down. This is a wonderful time to be alive, because in the next twenty years everything is going to change, and it's coming very fast.

How about comparing the European market to that in the States.

The European market is better because of homogeneous population density, and this creates the market. Distance is a big deal. Marketing is much easier in Europe because of distance, proximity. English remains the common language all over the world. Commodore did a better job in Europe. The Japanese culture is also amazing. It's a vibrant and vital culture. Education in Japan is more math based, so *Imagine* has done really well there. *Imagine* is used a lot in the production of "Japamations." The Amiga itself hasn't done that well in Japan. It's a very linear society. In comparison, the US is like fractal disturbed noise, M.C. Escher should have been president here.

At this point, what can you say about Commodore?

I served as the anti-Christ with Commodore. They had Apple at its knees, and they backed off. Their management team was always made up of namby-pamby "yes men". I told them in several meetings how to get control of things. Their top brass made a hideous amount of money, using the company as a vehicle. I don't know if they ever had much of a vision of the future. At Impulse, we don't do things with money as our first priority, but to make a change and a difference. Since 1979, Commodore has lacked a vision. Commodore bought the Chip set but never went anywhere with it. Companies should always give their customers more than what they paid for. The Amiga never obeyed industry



This picture is an obvious slap at the Toaster and its connection with the SeaQuest US TV show.

standards. Commodore's idea of a video explosion was just a premature ejaculation. Commodore should have fired all of their managers and hired some people like Steve Jobs. Gould should have gone off to the Bahamas and stayed there. He didn't know what he was doing. I never tried to run my company so I could amass debt. Commodore should have married the Intel technology to the Amiga very early on, and should have had the sense to put the Toaster on a Chip or two. If someone gave you a billion dollars, could you waste it like they did? They must have wanted to go broke. If I were president of Commodore, we would have had a hellasciously cool computer. All

"Computers are a miracle. We are out to give people a taste of what is possible."

the good people I know left Commodore. The DEVCON conferences were just an excuse to get drunk, just like COMDEX. I would have made the system PC compatible from the start. Commodore should have gotten into the TV-Box business by itself. I would have given the stuff away. A 24-bit display card for the PC is about $100. How much is one for a 4000? It was Commodore central that made the mistakes, not the dealers, though they usually got the blame. No one of us will ever know the whole story. Somebody needed to get control away from Mr Gould early on for this thing to go where it should have gone.

But Impulse still supports Amiga users, even under the present stressful situation.

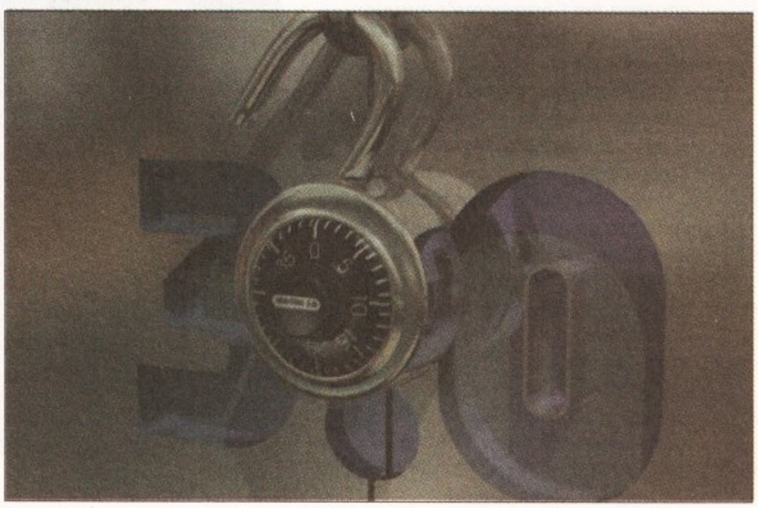
We support people, not computer companies. We support the people who need the technology. We like the people better than the computers they work on. Our job is to take care of our customers. That may keep us a small company, but so what! We will continue to support the people that need and use our product. Never believe all that #@** about *Imagine* on the PC versus *Imagine* on the Amiga. We took the Amiga operating system and ported it to the PC. This gives future pentium users a starting familiarity with our wares. The Amiga should have a 486 Chip in it now.

How about the new Impulse hardware products?

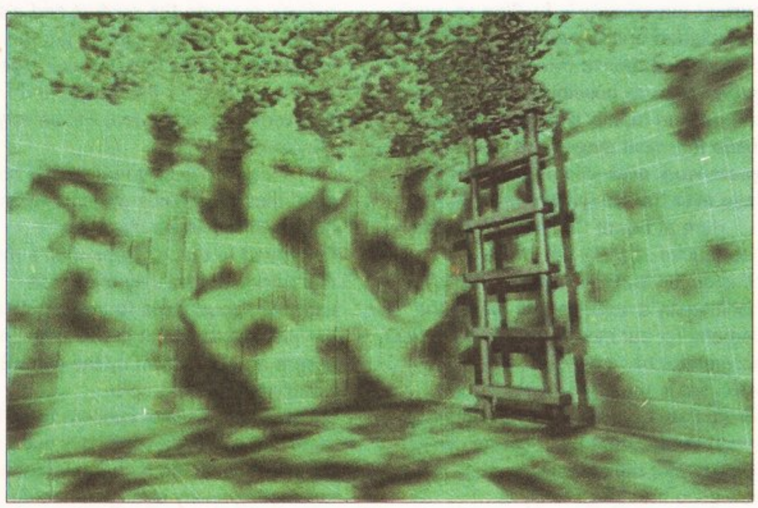
Our Digi-Max 3D digitizer will be out in July, and will sell for about $1,000. It will cover an area about 18 inches around. A Digi-Mini will follow for about $300. Obviously, it will do less. It should be out by next Christmas. Look for our "Color Picker" in early Fall. It'll sell for about $100, and will allow you to get any color from your environment for use in a paint program or 3D software. This market is going to be as big as we want to make it. Other possibilities that we are working on at a slower pace include virtual reality devices, positionable controlled puppet devices, non-linear editing hardware (our initial offerings were bought by Sanyo, though we will still be able to offer them for sale), a low-cost still-video SLR camera. The visual communications horizons are truly boundless. We want more people to do art and show the experiences of their minds. If a picture is worth a thousand words, than an animation is worth a decade of pictures.

Would you like to leave the readers with some final comments?

Merry Christmas and a Happy New Year. Oh, I don't know? I think that people with computers should get out and participate in the human world. Sometimes you've got to take your pants down and slide on the ice. We should call up someone whom we haven't seen for a long time and take them to dinner. Everyday I get wiser because I have more questions. Computers need to open doors. People need to go out in the woods. Computers are nothing but devices for getting out of our brains what we have some difficulty getting out otherwise. Make sure that *You* support the efforts of the people who are making the products for you. Tell them the truth and act with a good degree of civility. We are making a full length feature film with *Imagine* in the near future. The script is in process at this moment. Now... go plant your garden! AS



This lock shows the power over metal and reflective textures that users of Imagine have come to expect from this outstanding package.



A wonderful scene from the bottom of a swimming pool gives you an idea of Imagine's fantastic ability to mimic fractal environments.

Know what I mean?

Discover what the top industry figures really think.

Jolyon Ralph of Almathera on "Why I bought a PC"



"I can't say I enjoy using the PC. MS-DOS and Windows are terrible and the hardware architecture is absolutely ghastly. However, the PC has some decent software."

Last month I, Jolyon Ralph, Technical Director of Almathera Systems and occasional *Amiga Shopper* freelance writer, did something I had sworn never to do – I bought a new computer to use at home, and it wasn't an Amiga.

Previously I had used my expanded A1200 (50Mhz 68030, 170Mb HD, 10Mb RAM), my office machine, which commuted with me between the office and home. I had a spare monitor, power supply and mouse at home, so I only needed to unplug the A1200, stick it in the carry case and chuck it in the back of the car. Despite being designed as a games machine, the A1200 survived this hectic treatment intact for over a year while I was developing *Video Creator* on it. It even survived unscathed the time I threw it in the back of the car at exactly the same time as someone else opened the door on the other side and watched helplessly as my A1200 flew out and landed on the road. I was glad I had a backup, but as it turned out I didn't need it.

Now the A1200 stays at the office and I have a brand new PC at home. As you may have guessed, I think the A1200 is a wonderful machine. I still have it on my desk today, even turning down the opportunity to exchange it for an Amiga 4000. Why did I defect then?

There are several reasons, but the main one is software. The quantity and quality of software on the PC is now so far ahead of the Amiga in many areas (business software, development tools, simulation games, for example) that there are some things that you can do on the PC that just simply can't be done on the Amiga.

Word Processors are hardly specialist applications, yet there are only two or three Amiga word processors that are currently still being actively developed and supported, and none of these are anywhere close to Microsoft *Word for Windows* on the PC for features or usability. Amiga word processors are fine if you want to knock out the odd letter, but there's nothing powerful enough to do the complex documents that I need to do. I produced the entire manual for *Video Creator* in *Word for Windows* on the PC. I could never have done that in the time I had on the Amiga.

Quality Amiga spreadsheets simply don't exist. I've seen nothing that is anywhere near as good as the poorest of the current PC spreadsheets. Amiga DTP programs are a joke, and not a funny one at that.

Database systems? Only one on the Amiga of reasonable quality (*Superbase*) and that's also looking a bit long in the tooth now. What about simple programming languages that anyone can create powerful applications with? There's nothing even remotely close to *Visual Basic* on the PC.

Why is it that Amiga professional software, with the notable exception of excellent quality graphics and video software (*AdPro, LightWave, ImageFx, Scala*, etc.) is so poor? *Word for Windows* was launched in 1989; why have Amiga owners, after five years, still not got a word processor comparable to even that first version?

There are two main reasons: first, most Amiga developers don't have the resources that a company like Microsoft can put behind a product, and Commodore have totally failed to persuade big software developers to support the Amiga; second, Amiga applications are being held back by the apparent need to support the less powerful members of the Amiga range. In my opinion a Kickstart 1.3 Amiga 500 with 1Mb of RAM and no hard drive isn't much good for anything now. Even a standard A1200 with hard drive is barely adequate when it comes to running powerful software. You can't expect miracles on slow machines, and without any fast RAM, the A1200 is slow. Publishers of top end applications should look at a minimum configuration of Kickstart 2, 3Mb RAM, 68020 or higher and hard drive. Anything less than this is, quite frankly, a games machine.

I can't say I enjoy using the PC. MS-DOS and Windows are terrible and the hardware architecture is absolutely ghastly. However, the PC does have some decent software indeed, and although it's not as fun, I can do the work I need to do.

Of course, when I get into work in the morning, I turn on my monitor and I'm back to wonderful Workbench 3. Roll on decent Amiga software, and perhaps *then* I'll ditch the PC. ***Jolyon Ralph***

Mark Arnold of Power Computing on "The Fate of the Amiga"

The most important factor from both ours and Commodore's point of view is the end user. The current uncertainty is fuelling so much speculation and the Amiga market is currently confused; this must be sorted out as soon as possible. The situation will decline rapidly if things are left in limbo for much longer and the endless guess-work over who may or may not take over the company continues.

Here at Power Computing we have not noticed any real fall in sales, considering that this time of year is traditionally a quiet period. In fact the demand for our new Viper 68030 A1200 accelerator has been extremely successful, therefore showing that Amiga users are still quite prepared to invest in the latest and best hardware available for their machine – they *know* how good the Amiga really is.

We hope that any prospective buyer will realise the enormous potential that the Amiga market has, and will actively promote the product and also inject much needed cash to get the Amiga back on its feet. If this happens, then the future for the Amiga, and for everybody concerned, will be very rosy indeed.

Power Computing realise just how good these machines are and we know how loyal the Amiga users are. Compared to the PC's and Mac's much more fickle users, they represent extremely good value for money. One of our present concerns is that many new buyers may be put off by the current uncertain affairs.

It is also a major concern to us that someone like Philips may buy out Commodore merely with the intention of eliminating a very strong competitor, thus improving sales of its sadly flagging CDi product.

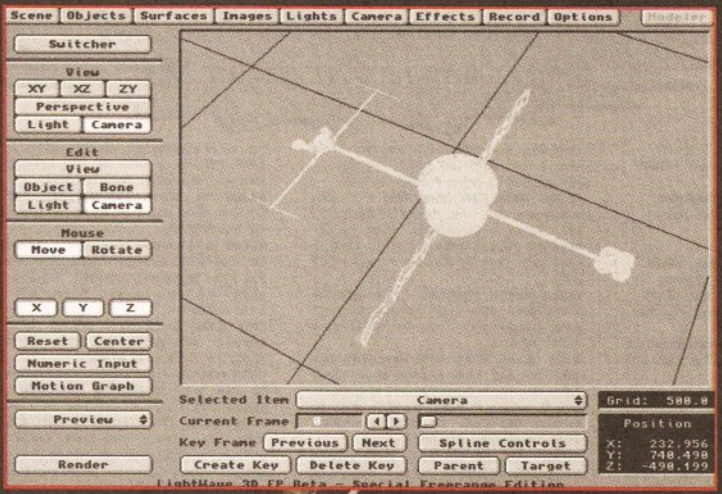
Other matters that don't help our situation are Commodore's current supply problems. We have many sales enquiries for both the A4000 and the CD-ROM drive for the A1200, but, because of not being able to purchase stock, sales are lost for both us and Commodore.

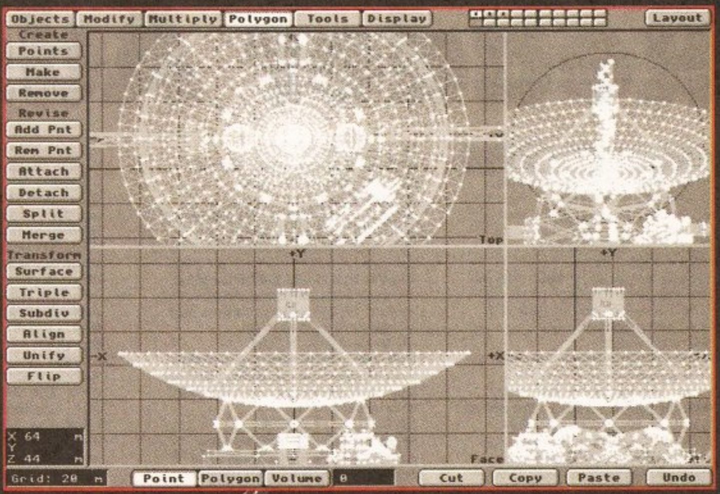
We believe firmly that the Amiga is a commercially viable product with a large user base and, coupled with the imminent new technology, will be an excellent and profitable proposition for a prospective buyer willing to inject some much needed cash.

All in all, Power Computing are not worried at all. We believe a buy-out is imminent and that it will be the very best thing that could happen to the Amiga in the long run. ***Mark Arnold***

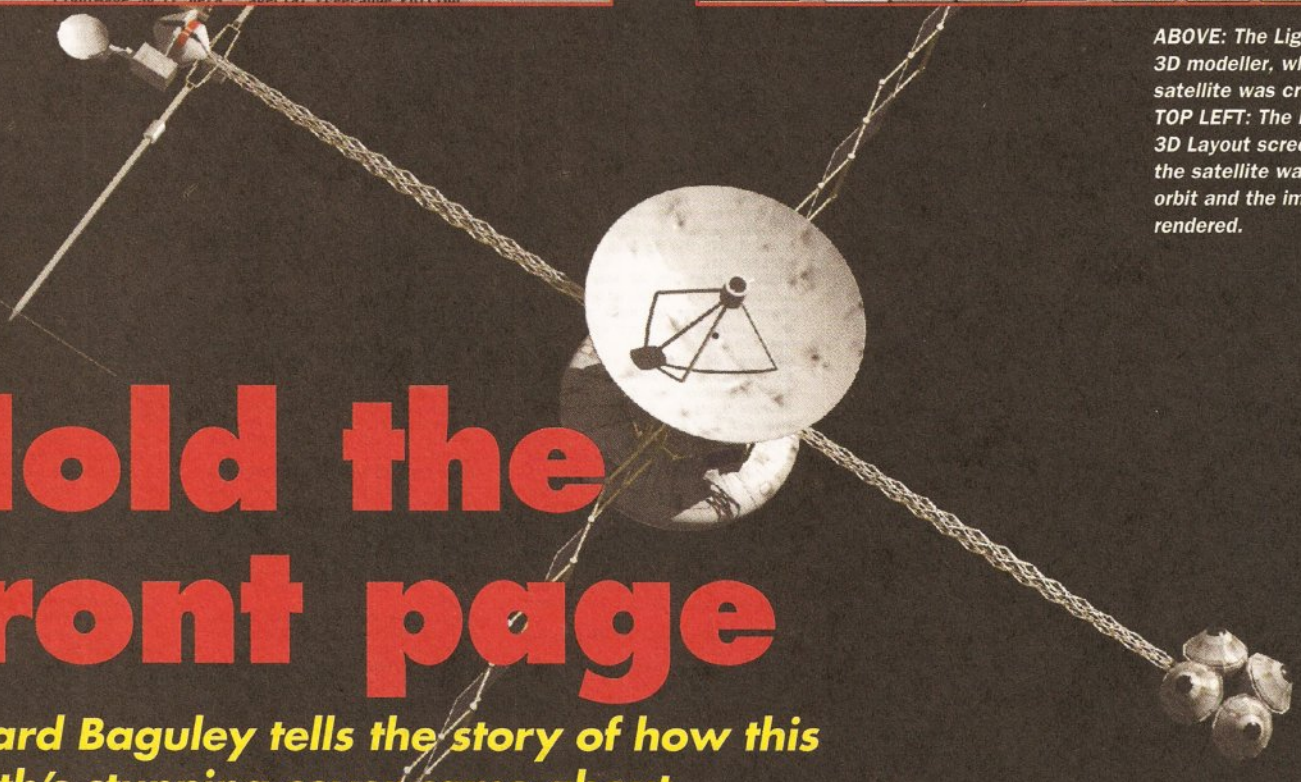


"We believe firmly that the Amiga is a commercially viable product with a large user base and will be an excellent and profitable proposition for a prospective buyer."





ABOVE: The LightWave 3D modeller, where the satellite was created. TOP LEFT: The LightWave 3D Layout screen, where the satellite was put into orbit and the image rendered.



Hold the front page

Richard Baguley tells the story of how this month's stunning cover came about

Covers are very important to magazines. After all, what makes you want to pick up the magazine in the newsagent? The cover. So, it's an integral part of the magazine, and one that we put a lot of time and effort into getting right.

We first thought about the cover when we decided that the main feature was going to be on the Internet. A couple of pints of good beer generated the idea of doing a cover connected with the ideas of communication and exploration, and a couple more pints brought forth the idea of getting an image of a communications satellite. Who, we wondered, could we get to do a really nice image of a satellite for us?

Instantly, the name Foundation Imaging popped into my head. After all, anybody who has seen the graphics in the Babylon 5 TV program (still being shown on Channel 4, 6pm on Mondays) will know that these people are capable of creating stunning images of spaceships. So, we contacted Paul Bryant of Foundation Imaging, and he agreed to create us a cover image. We faxed him through a few sketches of the sort of thing we wanted, and he started creating the models. As you can see from the front cover, the results looked pretty good. Incidentally, it's also interesting to note that this cover demonstrates the power of comms, as the image was created in California. It was then transmitted to us down the telephone line. As we both have pretty fast modems, this process only took about twenty minutes. We then copied the file over on to the Apple Macs we use for laying out the magazine and took it from there.

So how did Paul go about creating the model of the satellite? "Well, to be honest, I pulled a lot of chunks out of other models to make it. We have a lot of stuff hanging around that we can draw on to build this sort of thing. For instance, some of the stuff at the end of the booms I got from a Viewpoint geometry of the Voyager Satellite. I poached that, modified it a little and then stuck it on the end of a gantry. The gantry itself is a bit of girder work from an oil rig, but the solar panels I made from scratch."

How were the solar panels constructed? "They are built from maps. Maps are everything – if you were to look at this model without the maps, it would look pretty boring. There are colour, specular, reflection and bump maps on there, and they are all separate maps built up in layers to get that slightly bent gold and blue feel. On the dish, the surface map is a very, very light noise map. It's not only a colour noise map, but a specular one as well."

For the cover we needed an image with a resolution of 2000 by 2400. How much memory did this need to render? "To be honest I wasn't watching, but I think it was around 20 Megabytes."

So what does Paul reckon is the secret of creating realistic-looking ray traced images? "The whole point is that what you are trying to do is to get as much detail on as possible. Your brain tends to filter out most of the detail in things you look at, but it's still there. Our technique is the same. We provide a vast amount of detail in our images which doesn't necessarily get to be seen directly, but your brain looks at it and says "Hey! That looks real!"

What tips would Paul give an aspiring Amiga 3D animator? "Learn how to paint! Your mapping is everything. You need to be able to look at any real object and be able to say why it looks the way it does, and then be able to reproduce that in a paint package and then apply that to your geometries (models). Never say "that's good enough". The reason why our stuff is so good is that we are perfectionists. We always go the extra mile to make sure that our stuff is perfect."

Reader Ads

...or your chance to reach 50,000 fellow Amiga owners for FREE!

FOR SALE

Multisync "AOC" 14" monitor V.G.C. cost £350 new bargain £200. Power + monitor, leads, manual , original packaging, excellent!! £15. Retina 2 Meg X1 Paint 24 bit manuals, packaging. Cost £400 snip £300. Call Mike ☎ 0446 775287.

A2000 with 4 Meg ram (2 chip/2 fast) plus 40 Meg SCSI £450. O. S GIG SCSI base drive £350. Sony mini disk recorder £200. Call Derek ☎ 0450 375081 voice or ☎ 0450 373071 (BBS).

Power PC1204 4Mb memory with clock, as new, £160 o.n.o. Call Stefan after 4pm ☎ 021 329 2863.

B2000 4Mg twin disc drives Phillips monitor £500 o.n.o. Also at £10 each A19 Flight Simll, Indy 500, Grand Prix, Lemmings, JW Snooker, 688 Sub, Wings, Quarterback, Micro, French, Pen Pal, Superbase, Personal, Pinball, Dreams Fantasies. Call Mr Briggs ☎ 0287 633084.

A1200 Dynamite pack £200 o.n.o. new Xmas 1993. Call Mr Clinton ☎ 0738 828847.

Mastering Amiga Amos book by Phil South. Brand new, unused worth £19.95 sell for £15. Call Clive on ☎ 0923 241724.

A1500+ boxed, under guarantee and Philips 8833MK2 monitor plus software £250. Dataflyer 52Mb hard drive £70, Vortex 386SX PC emulator boxed, under guarantee, £150. All plus postage. Call Peter ☎ 0253 892861.

Supra Fax 2400 modem fax and modem in one great for beginners to get on line to a world of PD and othe Amiga users only £60 o.n.o. Call Jon ☎ 0793 878357.

A500 with 1Mb ram, complete with all manuals, leads and ten games. Excellent condition, offers between £100 and £150 for a quick sale. Contact Paul Gumsley, 5 Lockton Road, Whitby, North Yorkshire.

G.V.P. A530 120Mb hard drive, 40Mhz 68030 accelerator, 4Mb 32 bit ram, boxed £400. Call Mr Harding ☎ 0902 730570.

Amiga A1200 170Mb hard drive, 10845 monitor, 3Mb ram, external drive, 40Mhz accelerator, mouse, cables, loads of disks, excellent condition. Everything still under guarantee. Call Gareth after 7pm ☎ 061 434 8561.

Amiga 1500 WKB 2.0, 50Mb GVP+8 hard drive, Roctex external genlock, total of 3Meg ram, plus some software, £550 o.n.o. or could swap for 1200 with hard drive. Call Kieron ☎ 0633 422090.

GVP G - Lock, as new £250 o.n.o. Call Gary after 6pm ☎ 0924 891517.

Amiga 600HD Epic pack, 2Mb ram, Phillips CM833-11 monitor, external drive, lots original software, hardware and more. £450. Call Ian ☎ 081 553 4633.

Power hand scanner (greyscale) includes software £80. Air Bucks £10 populous £5. Mega Lo Mania £5. Defender of Crown £5. Buyer must pay postage. Call Greig ☎ 091 527 3472.

2.04 rom, new, unused, only £22 incl delivery. Call Derek after 6pm ☎ 0636 812159.

Canon 10N camera plus VIDI Rombo Amiga 12 both for just £400 too good to split all video leads available, excellent picture quality on the Amiga. Call Mr Kay ☎ 0772 716965.

Amiga 4000 030 with 130 HD and 6Meg ram plus over £1200 serious software hardly used with full 12 months at home warranty still available bargain at £800. Call Mr Kay ☎ 0772 716965.

A500 2Mb external drive mouse, joystick, manuals, great boxed games incl. Elitell and Rfts. All Amiga Shopper issues and 40+ disks thrown in. Offers. Call Sam ☎ 0422 885173.

Amiga 500 1Mb with loads of games including Sensible Soccer, Lotus 3, Zool 2, Amiga Lobo, Deluxe Paint and Print 2, Mouse, TV modulator, Joystick £175 o.n.o. Transwrite Amos. Call Anthony ☎ 081 848 3461.

A500 1Mb accessories and games. Everything in top condition £160 o.n.o. Call Robert ☎ 081 668 7200.

Amiga 2300 internal genlock for Amiga 2000 or 1500 only. J.V.C. Video audio two source mixer as new both £50 each. Call Mrs Goudie ☎ 0751 474896.

SAS/C V6.2 with manuals plus extra Libs £155. PC286 emulator for GVP hard drive boxed, new £50. Call Mike ☎ 07713 644708.

Broadiast Titler 2 plus font pack £160. Amos the Creator £17. Pro Video plus £100. Video effects 3D £100 or £360 the lot. Philips CM8833 MK 1 monitor wanted. Call Mr Berwick ☎ 0634 582181.

Amiga 1200 127 hard drive desk top Dynamite pack six months old, box, still under warranty £450. Call Phil ☎ 081 462 7400.

A500 1Mb immaculate condition Many games, business software, still under guarantee £190. Power PC880B external drive with Blitz, anti-virus £45. Star LC - 200 colour printer £140. Call Gavin ☎ 091 454 0549.

Two 3.5 external drives £25 each one internal drive 1500/2000 £30 various Abacus books half price. Airbus A320 £12, plus lots of various bits. Call Mr Pressman 0245 461709.

IVS HDD controller card, card only no drive £80 o.n.o. 8Mb ram card fully pop to 8Mb £175 o.n.o. both fit A1500/2000. Call Mr Bradley ☎ 0522 794539.

Star XB-24 200 colour 24 pin dot matrix printer with mono and colour ribbons with leads £250 o.n.o. Call Ian ☎ 091 286 4538.

Image processing software for the Amiga art department professional R.R.P. £150 will accept offers around £55. Call Dan ☎ 0202 432107 or ☎ 0725 552858.

Amiga Shopper magazines 31 copies Nov'91 to May'94 (inc all disks). Amiga Format, 7 copies Nov'92 to May'93, from .50p each. Buyer to arrange delivery. Call David ☎ 0949 839106.

Citizen Swift 240-C - Citizen 128KB ram cartridge 6 months old + final writer, boxed and manuals £300. Call Andrew ☎ 081 471 9984.

VXL30 40Mhz accelerator 25 Mhz 68882 2Mb of 32 bit ram, runs approx 13 times faster than A500. Fits A500 A1500, A2000 all boxed with software. Call Robert after 5pm ☎ 0924 455167.

Star LC100 colour printer for sale. Excellent condition, complete with box. Only £99. Call Mr Jones ☎ 0244 541 071

A500, 1Mb RAM, WB 1.3, boxed, vgc, 2 mice, 2 joysticks, PenPal, DPaint, AMOS, 3D construction kit, games and more, PD, magazines, £180. Call Jon ☎ 0705 482 700.

Amiga 1200, 40Mb HD, 6Mb RAM FPU, multi sync monitor, external floppy drive, analogue joystick, LightRave, serious software and games. Offers around £750. Call Mr Howse ☎ 0204 650 822 after 6 pm.

Amiga 4000/030 4Mb/80Mb HD, 1084 monitor, Citizen 120D printer, 2 external drives, MIDI interface + leads, Music-X, Pagesetter 3, Monkey Island 2, entire Amiga Format + Shopper collection, 100 blank disks, £1,200 o.n.o. Call Matt ☎ 0274 385 854.

Amiga video back-up, save 150 disks, two 13 hour tape £30. For more info call Mr Knight ☎ 061 790 0962.

Accelerator XA1230 50 MHz FPU/CPU/MMU makes A1200 faster than 4000/030 sorry no RAM £300. 2 1/2 in IDE HD for A1200, 200 Mb £150. Call Andy ☎ 0705 504 789.

A1200, 120 Mb HD, 40 MHz M1230XA accelerator, 2 Mb, monitor, jet printer, loads of games and over 100 mags, most boxed and in warranty £900 o.n.o. Call Wayne ☎ 0947 604 355 after 7pm.

Kickstart 2.04 ROM £18 o.n.o. Golden Axe £5. Drakkhen £5. Rocket Ranoor £5. Space Warrior II £5. Black Tiger £5. Final Whistle £5. Scramble Spirits £5. Spherical £5. Call D. Bateman ☎ 0904 624637.

A4000/040 2+8 MEM 120 HDrive IDI 350 HDrive SCSI CD-ROM SCSI Octagon controller Tapestreamer 1942 monitor. Lots of hardware, software, CDs. Quick sale needed – going abroad £2,500. Call Len Parry ☎ 0524 770 010.

Pagestream 2.2 inc. all manuals disks plus extra font and clipart disk £35. Call Mrs Miller ☎ 0228 401 480.

Atari STFM 520 with 40 games and mouse and power supply £150 o.n.o. Call Andrew ☎ 0782 775 014.

Amiga 600 with accessories £150 o.n.o. Call James ☎ 0724 845 490.

Amiga Computing/Format mags + disks. Various issues from Feb.89 to Feb.93. All original. Approx 45 disks. £40 or swop for anything useful. Call Mr Roberts ☎ 0522 688 884.

Final Copy II version 2 WP plus two Adobe Type 1 font disks (20 fonts) £40 plus £2 postage. Call DJ Turner ☎ 0843 831 086.

A1200, 64Mb Hard Drive, 4Mb + 28 MHz accelerator, disk drive, PenPal, VidiAmiga 12 RT, AdPro + Conversion, DPaint 4, TT2 Interface, 100s of disks and mags. £995 or separately. Call Mr Sumpter ☎ 0872 572 090.

Amiga Shopper Magazine – your definitive Amiga guide issue 1–37 inclusive. All cover disks included £37 o.n.o. Call Mr Eland ☎ 0705 552 940.

Supra 500XP, 52Mb SCSI Hard drive plus 2Mb RAM and Supra external power supply £250. Call Paul ☎ 0533 701 367 after 8pm.

SAS/C Lattice C 5.10, complete with all manuals and disks. AmigaDOS compatible £100. Call Pete ☎ 0623 650 013.

A1200 2Mb, 85 Mb HDD, 1940 Bi-sync monitor, Canon BJ10sx, 4 games, joystick. As new, six months old. All for £650 – no offers. Call Iain 0684 275 537 after 6pm. Must sell – a bargain!

Amiga 1200, 60 Mb internal hard disk, including warranty, 6 Mb ram, FPU, colour monitor, including warranty, external floppy drive, serious and games software, offers around £800. ☎ 0246 221750 only after 6pm

Power Computing PC1204 RAM and Co-pro board for A1200. 4Meg 32-bit RAM, 68882 FPU running at 33Mhz. Doubles the speed of your A1200. Costs £280, accepts £200. Unwanted gift. New. Call Daniel ☎ 0706 227767.

A4000/030 2+4 Mb RAM. Western Digital 250Mb Hard Drive. Philips colour monitor. Power high density external drive. 300 utilities and games. Still under guarantee. Boxed as new. Sensible offers ☎ 041 8870536.

Amiga 500+. Original software and manuals, GVP 52 Mb HD, KCS power board, Philips CM8833-II monitor. Large selection of games and utilities. Sell separately or packaged £650 o.n.o. Andrew ☎ 0656 773947.

Workbench 2.04 kit and ROM sharer. Includes disks, manuals and chip. £55. Peter Ecclestone, 4 Central Street, Mount Pleasant, Mow coP, S-O-T, ST7 4NZ. Games also. Write with S.A.E. for list.

Amiga 1200, 80 Mb hard disk, 1940 AGA monitor word processors, paint and programming packages. Games including Frontier. Boxed as new. 6 months warranty. Loads of mags. £720. ☎ 0684 833 361.

170 Mb IDE Hard Drive suitable for A600/A1200. Pre-loaded with Workbench 3.0. Only a few weeks old. £195. ☎ 0903 244402.

Amiga A1200, 80Mb Hard Drive, external drive 4Mb Hawk fast RAM workstation. £490. ☎ 0582 865070.

GVP A530, 80Mb HD, 1Mb 32BIT RAM, 40 Mhz 68030EC processor, boxed £390. KCS PC Emulator for A500+ with MSDOS vers and manuals, £75. ☎ 021 3314027 (evenings).

Citizen Swift printer 9/9X. Boxed with manual and colour kit. As new, £110. Call 0484 656486 or write to 170 Lowergate Paddock, Wedersfield, West Yorkshire.

A1200 HD, 85Mb. Full warranty, £400. Brilliance £95. Both new, boxed and unused. ☎ 0273 493659.

68882 50 Mhz maths co-pro (PGA). Suitable for most 68030 accelerator cards. The device has been tested but not used. Supplied in original anti static package. Bargain £80. ☎ 0703 862898.

1Mb A500, hardly used original, boxed, complete, plus games, joy stick, manuals £195. Call Ted ☎ 0742 874827.

CD32 with Oscar and Diggers £200 (o.n.o.). As new. Write to Matthew Pickersgill, 27 Crescent Rd., Dukinfield, Cheshire, SK16 4ET.

Amiga 2000, 030, 40Mhz FPU, 8Mb FAST, 2Mb Chip, 120Mb Hard Drive, loads of software, ideal for desk top video/publishing, £900. Editman Editor for panasonic VCRs, £300. ☎ 0773 857204.

CBM 1940 Dual Sync monitor. Less than 4 months old. Boxed as new £180 o.n.o. Buyer collects. ☎ 0242 241769.

PERSONAL

Graphic artist/animator with a keen interest in designing and graphically producing games needed by Amiga enthusiast who would like to get into games programming. Please call Sterling ☎ 081 677 3110.

WANTED

486 or 386 bridge board for Amiga 1500 must be in good working order. Call Mark ☎ 081 646 5744.

Laser Printer, 300(+) DPI, 1Mb(+) good condition, reasonable prices considered. Call Adrian ☎ 0297 552585. Wanted 68040 accelerator for Amiga A3000. Call Mr Baxter ☎ 0203 310719.

BULLETIN BOARDS

High tension BBS. Amiga only system. Hundreds of files online, speeds up to 14400. New users always welcome. Call 0734 794 923 10pm – 7am/ 7 days a week. Friendly SYSOP.

Pilgrims BBS. Amiga only system. Loads of files/messages online. CD-ROM free access, no ratios, speeds up to 14400, great SYSOP open 6pm Fridays to 6am Mondays. Call ☎ 0752 366 939.

The Power Plant BBS – loads of files online, 24hrs, speeds up to 16.8 D/S. Go on give us a call, you never know, you might like it! Call Neal ☎ 0229 431 590.

Amiga Buzz BBS. New telephone no. ☎ 0924 491 461. New opening times 7pm – 5am weekdays and 24 hrs at weekends.

New members for Plymouth's only Amiga BBS. Online CD-ROM, complete Fred Fish/17 Bit libraries, friendly SysOp. Open 6pm Fridays to 6am Mondays. ☎ 0752 366939.

Teri Odin BBS speeds to 14400, 24 hours. 2 x CD Rom drives. No upload ratios. FREE PD! 17bit 1 - 2800, Fish 1 - 1000, Aminet 1+2, Euroscene , Demo CD 1/2. Call ☎ 0450 373071.

The Shining BBS. Amiga only system. Loads of files, messages and anything else you could possibly want! All speeds to 14400. Open all cheap rate times! Call it now! CUL8R. ☎ 0730 895789

Amiga users! Call Clacton's finest BBS. No up/download rations. Up to 14,400 bps. Great Sysop ☎ 0225 434992 10pm–8am. 7 days a week. Sailors Rest BBS. **Amiga Tavern BBS 100% Amiga, hundreds of** files online. Connected to Fidonet. All speeds up to 16.8K HST. Call now on ☎ 0455 840729. 24hrs. See you there.

Southend's largest Amiga BBS plus PC area! And a SYSOP that answers the pager, on-line 24hrs weekends, 7pm–7am weekdays, with great download ratios. Call today Den's Den BBS 0702 464818.

Amiga BBS: dedicated to quality of file library. Great sysop all ways willing to help with any problem, beginners welcome. PD CD Rom off line on request 24 hrs. Call Jon ☎ 0793 878357.

Callers for the opening of the UK's largest chat line BBS, No Fees, No Premium Rate Lines. TRY IT NOW. ☎ 0905 756491, 20 lines VTERBO online for sale and wants.

Silver BBS:- speeds upto 14400 BPS online 10pm till 4am. Lots of files, Blitz Basic, Area, Online Games, Very Kewl Board. Call Silver Tonight type to you then!! ☎ 0502 715296.

Teri Odin BBS speeds to 14400, 24 hours. 2 x CD Rom drives. No upload ratios. FREE PD! 17bit 1 - 2800, Fish 1 - 1000, Aminet 1+2, Euroscene , Demo CD 1/2. Call ☎ 0450 373071.

Den's Den BBS is back. Yes Southends biggest Amiga BBS is back on-line. From 1/7/94 and it's bigger and better than ever. Call ☎ 0702 464818. 7pm till 7am every night.

Sell your used hardware and software in *Amiga Shopper* for FREE!

The editor reserves the right to refuse or amend ads. We accept no responsibility for typographical errors or losses arising from the use of this service. Trade ads will not be accepted, including anyone advertising the sale of PD software.

Issue 40

Name ....

Address (not for publication) ....

....

....

Postcode .... Date ....

Tel ....

Tick to show required heading

- For sale ..... ☐
- Wanted ..... ☐
- Personal .... ☐
- Fanzines .... ☐
- BBSs .... ☐

Use one space for each word. Only the words in this section will be printed.

Return to: Reader Ads, *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW.

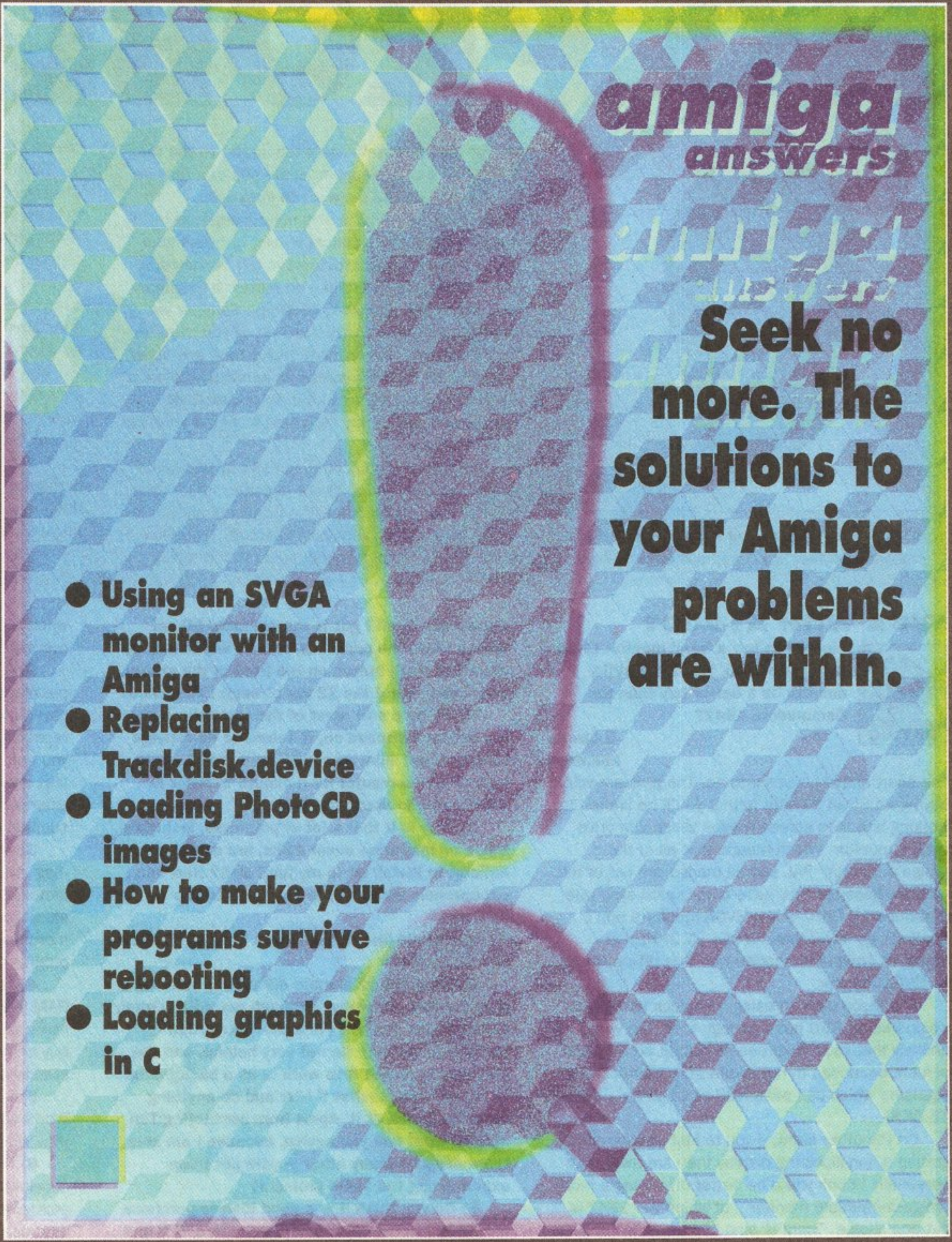
Unfortunately we cannot guarantee insertion in a particular issue.

I have read and understood the conditions for the inclusion of my ad.

Signature ....

CONTENTS AT-A-GLANCE

OUR EXPERTS TACKLE YOUR REAL-LIFE PROBLEMS



USING THE ICONS TO FIND WHAT A QUESTION'S ABOUT



Beginner questions raising basic problems.



General Amiga-related queries or questions.



Queries related to Amiga desktop publishing.



Questions about monitors and TV displays.



Queries relating to general hardware problems.



Questions asking for buying advice in any area.



Printers, drivers and hardcopy problems.



Coding problems (no matter which language).



Queries about using your Amiga with video.



MIDI, sampling, software and synths.



Software packages and programs queries.



Questions relating to comms, including modem.

NO PROBLEM!



Is your life a misery filled with unsolved Amiga problems? Cheer up, Graeme is here to help.

Hello and welcome once again, to the area of *Amiga Shopper* where you can turn to find all the answers to questions concerning your Amiga. It's my privilege, as *Amiga Shopper's* technical writer, to make sure that not one of your problems is left unsolved. Don't worry, we can help – no matter how simple or complex they may be. At *Amiga Shopper* we want you to get the very best out of your Amiga. That's why we devote more space than any other magazine to this indispensable service, so please make the most of it and keep your questions coming in. I will do my very best to find a solution to all your problems.

Don't worry if you come across any unfamiliar terms, just turn to one of our jargon-busting boxes to receive an explanation. The problems are put in a wide context for everybody's benefit. The index on the previous page is your guide to the topics covered this month.

By now, you are probably familiar with our team of Amiga experts. **Mark Smiddy** knows all there is to know AmigaDOS and floppy drives. **Jeff Walker** is our desktop publishing, fonts and printer correspondent. **Gary Whiteley**, is a trusted expert on video applications and graphics. If you have a query about comms, we'll set our communications guru **Dave Winder** on the case. **Toby Simpson** is our code clinician. If you've got problems with anything from C to assembler, try taxing his little grey cells. Finally, we've got a man you can rely on when it comes to operating systems programming – **Paul Overaa**.

Don't be afraid to let all your queries, problems, worries, or general tips and hints come pouring in – they're what we live for. With a good tip you could be a tenner richer. Write to me and I will do my best to sort you out!

SVGA WITH A1200?

BUYING

I intend to buy a 'real' monitor to go with my A1200. Would an SVGA monitor be a better buy than the Commodore 1942?

B Lawrie
Aberdeen

The short answer is yes and no. The problem with buying an SVGA monitor is that you'll be limited to working only with screen modes which can drive such a monitor. Which means that all of the Amiga's 'normal' PAL screen modes are out of the window, because they have a horizontal sync rate of around 15.6KHz whilst SVGA monitors don't generally go lower than around 31.2KHz – so standard Amiga PAL modes won't be displayed on an SVGA monitor.

And if you plan on using a genlock or digitiser which has an RGB pass through then it is very unlikely that you'll ever see its output on an SVGA screen, because I'm not aware of any genlocks or digitisers which can pass RGB at 31.2KHz – only at 15.6KHz.

On the other hand, if you're just interested in getting a non-flickering display then fire away. But personally I think you'd be better off buying a more Amiga-compatible monitor – of which the 1942 is but one choice. There is also Microvitec's Cubscan 1440 multisync (which costs around £400) or their new Autoscan 1438 (around £300), each of which support all the Amiga 1200's screen modes. Of course they cost more, but then you get full A1200 compatibility and hence better images all round as a result. ***Gary***

UPGRADING ANGST

GENERAL

Could you please answer the questions listed below. To put you in the picture I have an old 1.2 A500, but I have replaced the ROM with a Kickstart 1.3 ROM. I have the Commodore 512K trap-door expansion, Vortex ATOnce, GVP 52Mb hard drive with 2Mb of SIMMS fitted, and an external floppy drive.

1) I have a Star LC24-200 printer and when I want to output text at 12 cpi, working with *Excellence 2*, all I get is the standard 10 cpi unless I turn the printer on and off while holding down the pitch button on the front of the printer. How can I select the 12 cpi through *Excellence*?

2) If I try a soft reset of the computer with the printer switched on, it seems to do strange things – I get Guru messages and then have to turn off the computer for a minute to reset it. What can I do about this?

3) Why is it that a lot of programs, including those on magazine cover disks, are extremely difficult to install on to my hard disk? How can I successfully install these programs to the hard disk?

4) I would like to have more Chip RAM. What is your advice?

5) I find *SID v2* is more difficult to operate than previous versions, although potentially more powerful and flexible. I find the installation method in the text file not very helpful, and the only way I can get it to work is as a background task, and this crashes if I try and do anything other than look at it. Apart from contacting Tim Martin, what can you advise, because I am sure there must be many other people out there experiencing the same problem?

6) Do you think it is a good idea to purchase the A5000 accelerator complete with a FPU and continue to utilise my old, but now faster, system, or should I throw the lot away and spend about £1,200 on a new A1200 getting to the same hardware and software stage that I am at with my old A500?

Terry Evans
Charlton Kings, Glos

1) Like a number of word processors, *Excellence 2* prints in two ways – it either does a graphics dump using the on-screen bitmapped fonts by selecting an Output Type of Graphic in *Excellence's* Print requester, or it can print using a printer's built-in fonts by selecting an Output Type of Draft or NLQ. When set to Draft or NLQ, the font number can be selected in *Excellence's* Print requester, but the pitch is selected in the Page Setup requester.

With my printer (a Canon BJ-230) set to Epson emulation, and using the EpsonQ printer driver, when I select 12 cpi in *Excellence 2's* Page Setup requester I do indeed get 12 cpi output.

2) A soft re-boot will send a signal to the parallel port that pulls the voltage low on the port's reset line. Some printers ignore this signal, others reset themselves. If your Amiga is crashing when you soft re-boot with the printer switched on I would first check your cable (try a friend's cable for example), and if the problem persists then I would suspect a broken CIA Chip.

3) Any decent program these days, including most shareware, uses the official Commodore Installer program to enable you to install software either to floppy or hard disk. You'll have to be much more specific if you need help installing a particular program.

4) The only way you can get 512K more Chip RAM in your old A500 is to have modifications made to the motherboard. Either have this done, or buy an Amiga that comes with more Chip RAM as standard.

5) I understand that *SID v2* was written with Workbench 2 in mind and does not work properly with Workbench 1.2 and 1.3.

6) I would not advise anyone to buy the A5000 accelerator. There were a number of compatibility problems, the company which made them went bust some time ago, and I'm surprised that they are still available. A better idea might be to contact a GVP dealer and ask about upgrading the motherboard in your GVP hard disk unit so that it can take the GVP accelerator. If you are thinking of spending £1,200, don't faff about expanding a new A1200, go for an A4000. ***Jeff***

MOD TROUBLE I

HARDWARE

I have recently upgraded my old Amiga 500 for a new A1200 as I was beginning to feel left out because of all the good things I've read about it in your magazine. I borrowed the cash from my dad to buy the A1200 and in the meanwhile I've put my A500 on sale.

I bought the A1200 second-hand, complete with 2nd disk drive and an oldish-looking broadcast monitor. All seemed to be running fine

until I decided to try plugging the A1200 into the TV I previously used with my A500.

Everything works well until the software generates sound, whereupon the screen begins to flicker. And the louder the sound, the worse the flicker! My dad, being good at electronics, diagnosed the problem as being 'sound on vision'. He said that it might possibly be caused by the A1200's internal modulator, especially since this problem only happens when I use the TV as a display. Do you think that the problem might be 'sound on vision' and can you tell me where to get another modulator, and how much I should expect to pay for it (I haven't seen any advertised in your mag)?

Would buying a sampler (e.g. Technosound Turbo) cause crackling samples under the present conditions? Also, are there any other problems which might arise from my A1200 having a faulty modulator – which might affect video titling, for instance?

Gareth Brandwood
Runcorn, Cheshire

This 'sound on vision' problem doesn't sound at all right, does it? Yet it does sound like a very possible cause of your troubles. So I guess that a new modulator might well sort things out. Lola Electronics (☎ 0858 880182) sell their L520 modulator for £34 and it is a direct replacement for Commodore's A520 model – and you'll find it advertised on page 57 of *Amiga Shopper 37*! I've noticed various companies (including Hobbyte) advertising the A520 for around £30 and Silica also advertise the AmiTek modulator for £34.

As for the possibility of crackling samples I don't think you should be too concerned. It's the sound going in that's sampled – so unless the Amiga's audio outputs are also duff then I don't think you'll have any undue sampling problems. ***Gary***

REPLACE TRACKDISK.DEVICE

CODING

First, I would like to thank you for dealing with my last programming problem in Code Clinic. You were right to some degree in that I am attempting to write a custom disk loader, but not for a commercial game. I am actually working on a replacement for the Amigas trackdisk.device – this new device will provide several advanced features currently not provided by the Amiga's system software. To this end I am hoping that you can help me with a couple more problems:

1. In order to Gain complete control over the Disk Drives it is necessary to open the disk resource and perform an AllocUnit for each drive mounted. The problem is that each unit is already allocated to the trackdisk.device at boot-time. Until now I have had to use the boot-menu to disable all of the drives I wish to take over. How can I do this using software? It must be compatible with all Amigas including those running 1.3.

2. The Amiga hardware reference manual only covers the floppy disk controller for standard drives – where can I get the programming information for High Density drives?

3. How do I access the system mountlist to see if the new device units are going to cause a name confliction with drives already mounted?

Maurice Scorey
Oakridge, Basingstoke

This is quite an odd one, because I'm baffled as to why someone would want to reinvent the wheel in this way. The trackdisk.device is a powerful, complex and reliable piece of software, and I can't see too much to be gained from re-writing it in this manner. A better (and much easier, from your point of view) bet might be to try and add features over the top of the existing trackdisk.device, using trackdisk.device calls. If you are intending to write an actual replacement for trackdisk.device, it will have to have that name in order for other applications to use *your* device rather than the existing one, and that will be very difficult to achieve legally (indeed, the best way I can think of is to SetPatch the OpenDevice call and replace any attempted OpenDevice("trackdisk.device"...) with "mytrackdisk.device") It is unlikely that you will be able to fool all of the software, particularly when it comes to Eject commands and geometry. But, if you insist on attempting to figure this one out, I'll do my best to answer the questions.

1. You can call GetUnit() even if AllocUnit() fails, but you may not get the drive given to you immediately. Your best bet is not to replace trackdisk.device, but to sit over it, in the same way that the crossdos filesystem does. You'll have to tag disks specifically, though, as being your format to avoid trackdisk.device recognising them.

2. I'm afraid I don't know the answer to this one, but I can attempt to point you in the right direction. It is not a bit in the main chipset, for sure, so it is likely to be one of the CIA bits. You will run the risk of your software not working on all future High Density drives if you do find the method, however. The high density drive achieves its work by halving the motor speed, so the bit is likely to be called "DSKSPD" or something of that sort.

3. You can process the output from the AmigaDOS 'INFO' command, or walk the DosList. This involves locking the list with LockDosList, and then working your way through it. Each item in the DosList refers to a disk volume, a device name/directory, or an assign. A full detailed specification of the DosList, and how to access it can be found in the AmigaDOS manual, 3rd Edition, which costs around 23 pounds. Its ISBN number is 0-553-35403-5.

As one other source of information for your problem, you might like to have a look at the Abacus book *Amiga Disk Drives Inside and Out*. It's packed choc-a-block with totally illegal programming, but, does contain useful information on disk drive work in general, and MFM encoding/decoding. Worth a look to see if it helps you out. ***Toby***

TWO INTO ONE

MONITORS

Am I unique amongst Amiga users in that I want to connect two display devices to one Amiga?

I have an Amiga 1200 which I use for WP, DTP and the odd game and I have it hooked up to a Philips 8833 MkII monitor. Alongside the A1200 I have a 21" TV which has an RGB input via a SCART connection. I found it easy to obtain the relevant leads for each monitor, but my troubles began when I wanted to connect the two together so that I could switch from one to the other without having to unplug and swap leads. Because of eyesight problems I prefer to use the RGB on the 21" TV as the larger size makes it easier for me to cope, but there are times when I want the TV on whilst I am using my computer, so then I need to use the Philips monitor.

The biggest problem is that the RGB connections are at the back of the A1200 and because of the way I have my system set up it is not very accessible – plus continual plugging and unplugging is not recommended. The simple answer seemed to be an adaptor box with a 23-pin input and two 23-pin sockets for the outputs, preferably switched.

Despite trying a number of dealers I have been met with blank stares because not only are they unable to supply such an adaptor but it seems that I'm the only person who has ever asked for such a device. Surely there must be others who want to connect two monitors to their computer and if anyone is already doing it, I would be glad to hear their tips on how to do it. Equally, I would be glad of any advice you can offer, or if you could point me in the direction of a suitable manufacturer. I should also add that I haven't even been able to find a dealer who can sell me 23-pin connectors.

Brian McMahon
Corby, Northants

No, you're probably not unique Brian, though I'd hazard a guess that you might just be something of a rarity.

Let's look at a few possible solutions, since I'm pretty sure that the kind of switching device you're looking for probably isn't (and never has been) available anywhere in the known universe.

Perhaps the simplest solution is to build yourself a 23-pin to 23-pin extension cable (or get someone else to do it if either your eyes or your soldering aren't up to it). This way you could at least access the RGB signal easier, even if it isn't switchable, and because the Amiga end remains firmly in place, you won't need to worry about straining the RGB socket. But don't forget to switch off your Amiga before changing the cables over.

And before you remind me that you can't find 23-pin plugs and sockets, try calling Videk (☎ 081 204 6690) and ask them if they've got any because they had when I called them in late April and, as far as I am aware, they've supplied them for at least the last five years.

A second possible solution would be to get hold of a switched SCART splitter box and connect your Amiga to this, then plug in a pair of suitable leads (SCART to SCART for your TV and SCART to 9 pin D-connector for the 8833) to feed the monitors and switch as necessary. Try flicking through a few camcorder or video magazines to find a supplier for such a SCART switcher or call Trilogic on ☎ 0274 691115 and they'll sell you one for around £17 including P&P. If you need special leads making up to go from SCART to the 8833, then ask Trilogic about this – they make leads up too. ***Gary***

MACHINE CODE CRASH

CODING

I am writing a machine code program which needs to open some of the Amiga's libraries (DOS, intuition etc). However, every time I call a library routine, such as OpenLibrary, the computer crashes. This happens in even the simplest programs, such as:

```
  move.l      ExecBase,a6
  lea  DosName,a0
  moveq       #$00,d0
  jsr  _LVOOpenLibrary(a6)
  move.l      d0,DosBase
  rts

DosName:      dc.b    "dos.library",0
  even
DosBase:      dc.l    0
```

I have the 3.1 includes and I have written the

BURGLAR ALARM ASSIGNMENT IN C

CODING

HELP! Having bought *Complete Amiga C* to complete my college assignment I am now somewhat disappointed. I have been using Borland Turbo C at college for my final year assignment, which is to produce an emulation of a piece of hardware. I have chosen to emulate a keypad-type burglar alarm panel.

This, however, requires me to produce a screen that looks like a burglar alarm panel, with keys that go up and down in response to a key-press. I have written part of the software for such a task which works fine in Turbo C, but when I saw the advert for DICE and *Complete Amiga C*, I thought "great, here's just what I need – I can complete my assignment on time, and with the Amiga's superior graphics and sound, my completed program should look and sound great!"

Having read most of *Complete Amiga C*, there does not appear to be a reference to a file called "graphics.h" which contains functions like RECTANGLE, FLOODFILL, CIRCLE etc. Yes, I know that these are not standard ANSI, but surely a C environment for the Amiga should have the capability to produce such a simple request?

Also, to call my Button_Up() functions I have used GETCH() which does not require Return to be pressed like GETCHAR(). Where are the equivalents? Please don't say that there are none.

Mike Dawson,
Moorside, OLDHAM

The answer to your graphics.h problem is indeed that it is not the ANSI standard. So it is not there. The graphics.h file contains PC specific functions, and since the PC is such a simple beast (and I mean really really simple when making DOS apps), it is possible for you to simply say "rectangle" and off it goes. The Amiga is far more advanced than this – you cannot simply draw a circle. You have to firstly get hold of an area to draw it on, such as a screen, or a window. This requires more complex calls than a PC based system, but the results are far better, as lots of programs can co-exist in the same system easily. You will need to study the Amiga documentation for graphics.library for information on basic drawing functions. I recommend you open yourself a screen, with a window on it, and draw your burglar alarm panel inside that with functions from graphics.library. With regards to your other problem, it will go away when you adopt the above, as when you have opened your own window, you are able to ask for raw keyboard information to be sent directly to you. To get you going, here is a small program which opens a screen, and a window on it, and then shows all key-presses in the Shell window you ran it from. It requires 2.04 of the OS or higher, and works with DICE and SAS C.

```
/* Save as window.c and compile with DICE using:
**   dcc window.c -o window.x
*/

#include <stdio.h>
#include <exec/types.h>
#include <exec/libraries.h>
#include <intuition/intuition.h>
#include <clib/dos_protos.h>
#include <clib/exec_protos.h>
#include <clib/intuition_protos.h>

struct Library *IntuitionBase;

WORD newlook_Pens[] = { -1 };

void main(void)
{
  struct Screen *our_screen;
  struct Window *our_window;
  BOOL quit_program = FALSE;
  struct IntuiMessage *imsg;

  /*
  ** Open the intuition.library
  */
  if (!(IntuitionBase = OpenLibrary("intuition.library", 37L)))
    {
```

necessary macro "funcdef".

Iain Holmes,
CarrickFergus, Co. Antrim

Well, the first problem you have is that when calling OpenLibrary, the library name should be in A1, not A0. Even so, it should not crash, even under these conditions, as the library name will simply not exist and the function will fail (unless A1 points to somewhere really unfortunate, such as the custom Chip registers). I suspect, therefore, that your real problem lies in your implementation of the FUNCDEF macro, which should look just like this:

```
FUNCDEF    MACRO   *function
_LVO\1     EQU     FUNC_CNT
FUNC_CNT   SET     FUNC_CNT-6
           ENDM
FUNC_CNT   SET     5*-6
```

Incidentally, remember to check if the OpenLibrary call failed before attempting to call any functions in the opened library, and remember to close it when you have finished using CloseLibrary (which takes the library base of the library to close in A1). ***Toby***

THAT'S THE WAY IT GOES

PRINTERS

I own an A1200 (2Mb RAM, 80Mb hard drive) and require first class print quality coupled with economy. I am satisfied with my *Wordworth 2* and DeskJet 510 combination, except that printing takes about 90 seconds per page. Digita were no help with this, neither were Hewlett-Packard. Help! I don't want any fancy stuff – normal Courier will do, with the occasional change of point size. I will gladly pay to get it down to 30 seconds a page.

Marvyn Slater
London N3

Do you know I had myself the same argument with my car dealer the other day. I wanted to accelerate from 0 to 60 in five seconds and drive down the motorway at 180 mph in my 1100cc Ford Escort, and when I complained that I couldn't do it, he was absolutely no help at all. Kept mumbling something about I should have bought a faster car if I wanted to do that.

Come on, Marv, do I have to spell it out for you? ***Jeff***

PHOTOCD PIPEDREAM

BUYING

I have owned my A500 for three years. I have 512K Chip RAM and another 2.5Mb of fast RAM, a second floppy drive and the A570 CD-ROM drive. I want to use PhotoCD with my system so that I can process data through *DeluxePaint 3*. Will this work, and will the Asim CD-ROM filesystem work with my set-up?

I believe that I may need to increase my Chip RAM to a full 1Mb at least. What am I missing at present, and what will I gain if I increase the Chip RAM? Can it be added to the machine itself, or to the A570 CD-ROM drive? What is available and what costs can I expect?

D R Starks
Bridgewater, Somerset

Some modifications need to be made to the motherboard to convert your A500 so that it recognises 1Mb of Chip RAM. Various companies around will charge you around £25 to make the modifications (plus delivery), and should be able to turn your machine around in a week at most, although that will depend on how busy they are at the time.

Once the modifications have been made, the 512K of memory in your A501 trap-door expansion will be seen by the system as Chip memory. Having 1Mb of Chip memory will mean that any data that is required to be held in Chip memory – graphics, sound samples, fonts, to name but three – will have more RAM available to them, so bigger or more pictures can be held in memory, longer or more sound samples, bigger or more fonts.

You wanna play with PhotoCD, eh? Well, using the A570 and a suitable file system like the freely distributable AmiCD-ROM (contact a PD library) you should be able to read the first set of pictures on a PhotoCD, but that's all. To read a complete PhotoCD disc you need a multi-session drive, and the A570 is only single-session.

Even being able to access the first set of pictures, you will not be able to load them directly into *DeluxePaint 3*, no matter what CD-ROM filesystem or CD-ROM drive you are using. PhotoCD is essentially a graphics file format, and you'll first have to convert the graphics to IFF-ILBM format. There is a freeware utility called HPCDtoPPM which will convert a PhotoCD image to PPM format, and then you can use another utility called PPMtoILBM to convert the PPM image to 24-bit IFF-ILBM format. Neither of these utilities is in the Fish Disk collection, so you may have to hunt around a few PD libraries to find them.

To get the 24-bit IFF-ILBM graphics into *DeluxePaint 3* you will have to further convert from 24-bit format to HAM or EHB or 32 colours or whatever, and for that you'll need another utility, something like Wasp on Fish Disk 716.

If you have come to the conclusion that this sounds like an awful lot of mucking about just to view a picture that, because it has been converted to a far inferior format, is going to look nothing at all like the original PhotoCD picture, then you would get no argument from me.

So what do you need to play with PhotoCD? A

```
    printf("Unable to open intuition.library V37\n");
    return;
    }

  /*
  ** Open our screen:
  */
  if (our_screen = OpenScreenTags(NULL,
    SA_Title,       "Our test screen!",
    SA_Depth,       2,     /* Number of bitplanes, this gives us 4 colours
*/
    SA_AutoScroll,   TRUE,
    SA_DisplayID,   HIRES_KEY, /* 640x256 */
    SA_Interleaved, TRUE, /* Interleave screen, faster for WB3 users */
    SA_Pens,        newlook_Pens,
      TAG_DONE))
      {
      /*
      ** And let's open a window for good measure!
      */
      if (our_window = OpenWindowTags(NULL,
        WA_PubScreen, our_screen,          /* Ensure it opens on our new
screen */
        WA_Title,           "And a window too",
        WA_Top,             50,
        WA_Height,          100,
        WA_Left,            10,
        WA_Width,           200,
        WA_CloseGadget,     TRUE,
        WA_NewLookMenus,     TRUE,
        WA_Activate,        TRUE,
        WA_IDCMP,           IDCMP_CLOSEWINDOW    |
                  IDCMP_RAWKEY      |
                  IDCMP_VANILLAKEY,
          TAG_DONE))
          {
          /*
          ** Draw burglar panel now:
          */

          /*
          ** Window open, now monitor for key-presses and close-gadget:
          */
          while (!quit_program)
            {
            /* Wait for a message to appear: */
            Wait( (1L << our_window->UserPort->mp_SigBit) );

            /* Act on any messages: */
            while (imsg = (struct IntuiMessage *)GetMsg(our_window-
                >UserPort))
              {
              switch(imsg->Class)
                {
                case IDCMP_CLOSEWINDOW:
                  quit_program = TRUE;
                  break;

                case IDCMP_RAWKEY:
                  printf("Raw Key = %d\n", imsg->Code);
                  break;

                case IDCMP_VANILLAKEY:
                  printf("Vanilla Key = %d\n", imsg->Code);
                  break;
                }

              /* Now reply to this message */
              ReplyMsg( (struct Message *)imsg );
              }
            }

          /* All done, close window */
          CloseWindow(our_window);
          }
        else
          printf("Unable to open window\n");

        CloseScreen(our_screen);
        }
      else
        printf("Unable to open our screen\n");

      CloseLibrary(IntuitionBase);
      }
```

multi-session CD-ROM drive to start with, fitted to the Amiga via a SCSI port. To view the pictures close to how they are supposed to look you will need the AGA HAM-8 screen mode (not possible with your A500). To view them in all their full colour glory you will need a 24-bit graphics card (possible with an A1500/2000, but not with your A500). To paint accurately on to PhotoCD images you will need software that works in 24-bit – *ImageFX* would be better than *ADPro* because it has some painting facilities and there is a freeware PhotoCD loader module for it, or *Brilliance* could be used once you have converted from PhotoCD to IFF-ILBM. On top of this you would need enough RAM to store and work on 24-bit image data, which will be at least 6Mb for the higher resolution images before you start to feel comfortable – before the "Not Enough Memory" requesters go away I mean. Then, if you want to save these images after you have worked on them, you would need a hard drive because 24-bit graphics files are almost always too large to fit on to a floppy disk. Bet I've made your day. ***Jeff***

KEYBOARD

HARDWARE

I bought a 'standalone' A1200 from Phoenix Computers in Leeds last August and have noticed that my A1200 keyboard layout is very different to the ones I have seen on display in other shops. I've tried all the keymap types and the only one that matches is 'Italiana'. Have I been given a machine destined for another country?

B. Davey
Holyhead, Anglesey

From the keyboard drawings you've supplied, the machine you've purchased was certainly not for the UK market. You say you purchased it as a 'standalone' machine. Do you mean that it was a one-off 'bargain' offer? If so, I suspect that you now know why.

But why on earth are you talking to us about it – you should be taking this up with Phoenix Computers themselves. ***Paul***

A PECULIAR AMIGA DEVELOPMENT PROBLEMS

CODING

I have some general development problems and questions. I am using DICE with the 2.04 includes.

1. When I am opening custom screens they only use one colour, colour 1 (black), to draw the screen and window graphics. I can open screens with as many bitplanes as I have specified, and use the colours in my own graphics, but the system gadgets still all appear in black.

2. Is it worth the effort to support V1.2 and V1.3 of the operating system when you develop applications, or is it totally obsolete?

3. Where can I get hold of the 3.0 includes or the Native Developers Toolkit for the A1200? Since I live in Sweden and Commodore's office here is shut down, I can't currently get hold of them.

4. Is there a hardware reference for the A1200 coming, and if so, when and where can I get hold of it?

Stefan Ohlsson,
Balsta, Sweden

1. You need to specify the SA_Pens tag for OpenWindowTags in order to get the New Look 3d Imagery. The SA_Pens tag takes a pointer to a pens structure, and if you want to just accept the default 3D colour spec (which is fine in 99 per cent of cases), you just define an array containing one value, a bit like this:

```
WORD          sine_pens[] =
  {
  -1
  };
```

Then, add the SA_Pens tag to the existing tag-list for OpenScreenTags, like this:

```
SA_Pens, &sine_pens,
```

And then recompile the program. You might also want to set the WA_NewLookMenus, TRUE tag whenever you open a window to get black on white menus rather than the older white on black of 2.04.

2. This rather depends on what you are developing. My personal opinion on the subject is that it's not worth your hassle to develop for 1.3 unless you're likely to make a lot of money out of it. It's a considerable effort, as you can't use any of the features that make 2.04 and above so easy to program (like tag-lists for example, BOOPSI, Gadtools, ASL and so forth). 1.2 is definitely obsolete – anyone still running it should be laughed at if they do anything serious on their Amiga, as 1.3 is a very cheap disk only upgrade which has been available since 1988 now.

3. You can write to Commodore in the UK. The Amiga Developer Kit 3.1 is available for £23 (UK pounds), from:

Sharon McGuffie,
Commodore Business Machines UK Ltd.,
Commodore House,
The Switchback,
Gardner Road,
Maidenhead,
Berks SL6 7XA

And remember to enclose a covering letter asking for the "Amiga Developer Kit 3.1".

4. There is no hardware reference for the AGA

chipset currently available. If you have a very good reason to know the information, then write to Commodore UK and it can be supplied, although you will need to be a registered developer. ***Toby***

WRONG RESOLUTIONS

PRINTERS

I am using *Wordworth 2* on an A1200 with an Epson LQ-500 24-pin printer. With Digita Print Manager installed on my hard drive as per the instructions, I then enter *Wordworth* and set up the printer preferences to use the Digita PinDriver. If I then print in black and white, with the density set to any setting, I get a horribly garbled printout. If I set the prefs to Draft however, the printout is normal, and quite good quality. If I use the standard EpsonQ driver, in any mode, there is no problem. Am I dense? Surely if I print in draft mode and it is OK, it should be OK in NLQ or high quality mode?

G J Laing
Muscat, Sultanate of Oman

As it happens, I have an Epson LQ-500 so I was able to check on this first hand. As you say, unless you select the Draft printout in *Wordworth*, using the PinDriver in black and white mode produces garbage graphics printouts. This probably has something to do with the fact that the LQ-500, which is an early 24-pin printer, has different densities or 'resolutions' than modern 24-pin printers. Its top resolution, for example, is 360x180 dpi, whereas modern 24-pin printers have a top resolution of 360x360 dpi.

The LQ-500 has additional resolutions of 180x180, 120x180 and 90x180, whereas the PinDriver was written to support the more modern resolutions of 180x180, 120x360, 180x360 and 360x360. The only resolution in the LQ-500 that is supported by the PinDriver is 180x180, which is Density 3 (for the PinDriver). If my theory is correct, printing in Density 3 from *Wordworth* using the PinDriver should work properly in black and white mode using draft or not.... Smug grin. I just tried it, and it works. I love it when a plan comes together.

But of course at 180x180 dpi you are not getting the best from your printer. As it happens, the EpsonQ driver was written to work with the early 24-pin printers that had a top resolution of 360x180 dpi, and, as you have discovered, EpsonQ works perfectly with the LQ-500 in all densities – Density 4 and above in EpsonQ is 360x180, the lower resolutions are on Densities 1, 2 and 3. So use EpsonQ. ***Jeff***

CHOPPED GRAPHICS

PRINTERS

I own an Amiga 1500 with 80Mb hard disk, 4Mb RAM and a Panasonic KX-P4430 laser printer that has 3Mb of memory in it. I use *ProPage 4.1*, *Final Writer* and *Wordworth 2*.

Every time I print at a density of 300 dpi the graphics (if they appear on the screen) come out chopped into several pages instead of one image on one piece of paper. I have asked Panasonic, my dealer, Commodore, and the Amiga Helpline, who said I should get a printer driver, which I have (SG_HPLaserJet), but no specific printer driver for the Panasonic KX-P4430.

I've re-read all the manuals – printer, Workbench 2.05 and *ProPage* – and still haven't a clue. I just upgraded the printer to 3Mb of memory thinking this is the reason the images where not coming out whole, but still the problem crops up. What should I do?

I've tried cutting down the density to 100 dpi on the laser printer, and by using my dot-matrix printer, and the full image comes out on one page both times. But naturally the quality of the graphics output suffers if I do it this way.

The clip art is very good quality and comes with *Powerpacker Patcher*, which confuses me like anything. I used to get all the graphics on screen and could print them (in chopped images) with *ProPage 4*, but now all I get is "File is incorrect format". What am I doing wrong? Did I not install the *Powerpacker Patcher* properly on the hard disk?

Heidi H Prada M.A.
Norwich

Thank you for sending me the diagnostic printout from your KX-P4430 – that kind of information helps me to solve your problem. The first thing I notice from that diagnostic is that your printer is set to "Panasonic LP" emulation. This is Panasonic's own non-standard version of LaserJet emulation, so change the emulation to "HP LaserJet III". To take full advantage of a printer that emulates a LaserJet III (or PCL-5 as it is also called), you need proper software support, software which understands the features of PCL-5 properly (PCL stands for Printer Control Language, 5 is the version number). The driver you are using doesn't, neither does the standard Workbench HP_LaserJet driver, and there are no "PD" solutions; the only full and proper support for PCL-5 comes with *Studio Printer Software*, which costs £49.95.

ProPage will not import your clips because they have been compressed with *Powerpacker*. The *Powerpacker Patcher* program is supposed to automatically decompress powerpacked files so that any program can use them "invisibly", without knowing that they have been compressed in other words. The error message you are getting from

CODE CLINIC

Problem: Making a program survive a re-boot.
Language: Assembler
Name: Miss Lynn McQuitty, Co. Down, Northern Ireland.

Lynn is writing a computer security program as part of her finals project, but is having difficulties making the program RAM resident so that it will survive a re-boot, ie, become reset-proof. The program is written in assembly language, and is going quite well apart from this one problem!

It's rare that people want to write programs that survive boots like this, and indeed, they are becoming harder and harder to write as virus checkers take them out, and more complex booting sequences render them useless. The facility does exist, however, for this sort of thing to be written. Sadly it is less than a straight forward problem though. When the Amiga performs a re-boot, it goes through a set sequence of events, and quite early on in this sequence, the OS will check the ExecBase to see if a function pointer exists in the "ColdCapture" vector. If so, it loads the pointer into an internal register, clears it, and then calls that function. Later on in the boot sequence, a similar thing happens, but this time with the CoolCapture vector, however, it is not reset automatically like ColdCapture is. If you simply want to prevent re-booting after a security check, then ColdCapture is probably your easiest bet.

However, it's not as simple as that. Some systems totally defeat any Cold and Cool capture completely, such as developer machines who use special Rom Mapping to use newer versions of KickStart. This month's program, for example, does not work on either of my development platforms unless I boot them with no developer kickstart operating. So, your security program is going to have problems because of this – it can never be guaranteed to work on all systems, and even those which it should work on, problems could arise because development tools, or viruscheckers quietly remove it without telling you.

The other catch is, of course, that if you use ColdCapture, the system has not initialised enough information for you to re-allocate memory, so your program is likely to work only once unless you can put it somewhere where the normal boot sequence will not touch it, such as at the very end of your memory list. 3.0 of the OS and above has a facility to do this with AllocMem – you can specify the MEMF_REVERSE flag when asking for memory, and the OS will allocate it from the opposite end of the memory list than it would normally do.

In theory MEMF_REVERSE has been with us since kickstart 2.04, but the AutoDocs for AllocMem state that it did not work properly in pre V39 (3.0) systems, so be warned. By allocating memory using MEMF_REVERSE, you are pretty much guaranteed that the normal boot sequence will not overwrite your boot-proof program, and you can then have a routine in the WBStartup drawer or that runs in the user-startup file which will "refresh" the allocation using AllocAbs to ensure that it does stay put.

This month's program is a simple routine that demonstrates ColdCapture as a method of trapping re-boots. It can be used in two ways: either to stop any form of reset by hanging the machine and forcing a power on/off reset, or to flash the screen purple and continue the re-boot sequence. It will need lots of additional work before it could actually be useful, but it's a good starting point. It's not guaranteed to work on all systems, for the reasons outlined above, but it does give an idea of what is possible.

It's hard to go into any long description of boot survival, as some readers might see that as a free ticket to have a go at writing viruses, which no one wants. Information on boot-proof structures is hard to come by, but scouring of the AutoDocs and Exec includes can give some good clues for those who have legitimate uses, such as this security program.

Incidentally, the only way to have a foolproof security system is to have a hardware solution which plugs into the Amiga, and uses AutoConfig (which cannot be avoided) to load its security program into the system, and then asks for a password. The only way out of something like that is to remove the hardware which does it. A full description of AutoConfig can be found in the Hardware Reference Manual, either Edition 2 or 3.
Toby

ProPage indicates that *Powerpacker Patcher* is not doing its job, and so *ProPage* is not recognising the file format. As you wisely sent me a copy of the clip art disk in question I was able to see that you have been provided with an old version of *Powerpacker Patcher* that requires powerpacker.library to be in the LIBS: device for the program to work. So put your clip art disk in the internal floppy disk drive, open a Shell and type:

```
copy df0:libs/powerpacker.library to libs:
```

After this, double click the PP icon and *Powerpacker Patcher* will be active. You might like to contact a more on-the-ball PD library and see if you can get a later version of *Powerpacker Patcher* (V1.4 or later) that does not require the powerpacker.library file. ***Jeff***

MOD TROUBLE II

MONITORS

Soon after I got my Amiga 1200 I noticed that the display on my Philips TV would flicker whilst displaying blue shades. The more intense the blue, the worse the flicker got. Worse still, at full intensity the display even becomes monochrome.

I thought the trouble might be down to the modulator, but when the man from Wang came round to look at it he disagreed, but replaced the A1200's motherboard anyway. He seems to have been right about the modulator though, as the new gubbins appeared to have the same problem, so he eventually suggested I replace my TV with a monitor.

But first I tried the modulator from my A500 Plus and it turned out that it could handle the blues fine – however the picture was dark and extremely blurred.

Would a monitor solve the problem or would I just be wasting £300? And why does the problem only happen with the blue component? By the way, the TV worked fine with my A500 Plus.

Paul Coles
Solihull, West Midlands

Oh dear! Two dodgy A1200s in one issue. Or at least it appears that your Amiga is still not quite right. I'd have another word with Wang and point out that you're still not satisfied with your Amiga 1200's RF output. See if you can get something done about it. But first I'd suggest that you try one or more different TVs before you call Wang out again, because it might just be possible (though you may think otherwise) that your own TV is on the blink. At least this would give you some definite proof as to whether the monitor is to blame or not.

As for buying a monitor, I would always answer yes to this question, simply because a proper RGB monitor produces a much better picture than a modulator ever will. Clear, crisp images will show off the best from your Amiga 1200, but you'll need around a couple of hundred pounds to buy one. ***Gary***

A590 THROUGHPORT

HARDWARE

I am running an A590 210Mb hard disk with my A500 Plus. I also have a Naksha scanner. Since the A590 does not have a throughport I am constantly having to swap these peripherals in and out of the expansion port. I have been told that there is a switchable throughport lead available, but none of my local shops knows anything about this. Can you tell me where I can buy one?

Chris Tickle
Smithills, Lancs

Haven't seen it advertised for a while, but Datel Electronics (☎ 0782 744707) used to sell such a widget. ***Jeff***

ICONEDIT ICON SIZES

BEGINNERS

When using IconEdit on my A4000/30 is there any way to control the size of the outer window, ie the window that surrounds the icon itself? When I load images from other icons to replace the one I'm working on, and then try to save, IconEdit always saves the icon using the full size of the outer window?

Paul Matthews
St Leonards On Sea, East Sussex

There's no direct control but IconEdit does automatically work out the size of the icon based on the largest of the images being used. What you must do however is ensure that your images use the Workbench background colour for their background otherwise, as you've discovered, IconEdit will assume that the whole of the window area is to be stored. ***Paul***

GENISCAN GRIEF

DTP

I welcomed your DTP article on scanning in *Amiga Shopper* 37 as I had had the *muddy blotches* output at every attempt to scan and print a photograph. Only having a 240 by 216 dpi printer (9-pin), I worked out that I needed to scale by 31.25 per cent, but this did not work out. I soon realised that the problem was in my scanning. I am using a Datel scanner (Geniscan) with V5 software. How do I get my scans out when the only options are Save Screen IFF (640 by 256) or Save Buffer IFF (1,600 by 1,024), when my scan is only 800 or 1,200 pixels wide? Does other scanner software offer a more flexible

LISTING: COLDCAPTURE DEMONSTRATION

```
; By Toby Simpson
; ColdCapture Demonstration. Tested using DevPac 3.
; WARNING: Read the text of Code Clinic before trying this, it might
save you some
; trouble if it does not work correctly!
;
   incdir      "inc:"

   include     "exec/exec.i"
   include     "exec/execbase.i"
   include     "exec/funcdef.i"       ; You may not need this
   include     "exec/exec_lib.i"
;
; — Definitions and macros ....
_EXECBASE:     equ    $04                        ; exec.library base.
;
SYS:  macro
   move.l      _EXECBASE,a6
   jsr_LVO\1(a6)
   endm
;
; — Firstly, we need to allocate some memory ....
START:                   move.l#RESET_END-RESET_ROUTINE,d0
   move.l      #MEMF_PUBLIC,d1
   SYSAllocMem
   tst.l       d0
   beq.s       ST_Fail                   ; Failed to allocate RAM.
;
; — Now copy our reset code over to the new allocated memory ....
   move.l      d0,a1
   leaRESET_ROUTINE(pc),a0
   moveq       #RESET_END-RESET_ROUTINE-1,d0
ST_Copy_Code:  move.b  (a0)+,(a1)+
   dbra        d0,ST_Copy_Code
;
; — Install the new reset vector ....
   leaRESET_ROUTINE(pc),a0
   move.l      a0,ColdCapture(a6)     ; Store new vector out
;
; — Now we have to re-checksum the lower part of the ExecBase,
; from SoftVer to MaxExtMem ....
   moveq       #$00,d0
   leaSoftVer(a6),a0
   moveq       #((ChkSum-SoftVer)/2)-2,d1
ST_New_Sum:    add.w   (a0)+,d0                  ; Add to Sum
   dbfd1,ST_New_Sum
   not.w       d0
   move.w      d0,ChkSum(a6)        ; Store new checksum out.
;
; — Exit back to dos. Note we never free our memory so our reset
; code remains resident till a re-boot occours ....
ST_Fail:       rts
;
; — This is the routine which will be run every time we reset.
; ALL the code inside it MUST be relocatable. Avoid stack
; accesses as it is not initialised correctly at this point ....
RESET_ROUTINE: lea     RESET_ROUTINE(pc),a0
   move.l      _EXECBASE,a6
   move.l      a0,ColdCapture(a6)     ; Restore our reset.
;
; — This is bad programming, the loop length depends on processor
; speeds, it's just there to demonstrate this program works ....
   move.w      #$ffff,d0
RR_Flash:      nop                               ; Sync. Caches (Slow us
down)
   move.w      #$f0f,$dff180          ; Purple flash so we know it
worked
   dbra        d0,RR_Flash
;
; — Perform security check here ....
;
;  If the security was fine, bra.s to RR_Continue.
; If it was not, bra.s to RR_Forever, and the machine will hang
; till powered off.
;
;
; — This resumes the boot sequence ....
RR_Continue:   jmp     (a5)
;
; — This hangs the machine ....
RR_Forever:    bra.s   RR_Forever
;
RESET_END:     equ     *                         ; End of reset code
;
   END
```

READING IMAGES FROM DISK

I am writing an Intuition program in C which involves storing a graphic image from a window and, at some later point in time, re-displaying it.

I know how to display an image using the DrawImage() function, but do not know how to save such an image to disk in the first place or how to reload it. Can you help?

Peter Dobson
Blackburn, Lancs

From your original letter it sounds as though you are talking about the saving and retrieving of graphics based directly on Intuition Image structures and these images, as you will doubtless already know, consist of two parts: firstly there's the Image structure which holds details of the top left position, width, height and depth of the image, along with a pointer to the real image data, PlanePick and PlaneOnOff info, and a 'next image' pointer; secondly there's the image data which represents the pixel contents of the image. Needless to say, in order to reinstate a disk based image using this format both the image structure and the appropriate image data must be written to disk.

All this can be done using standard C style binary file operations, and to write arbitrary bitplane graphics as an Image structure you first set up and write to disk an Image structure that describes the size etc., of the image to be stored. Don't incidentally bother about the ImageData pointer value (write it as NULL for consistency), because at the time the structure is written the value will be meaningless. Code for this Image structure write operation will look something like this...

```
fwrite(image_p,sizeof(struct
Image),1,dest_p);
```

Having done that the image data itself needs to be written. The easiest idea is to use a loop and fwrite() each bitplane of graphics data (or the appropriate rectangular portion of it) just as it appears in memory. If all the data for all of the bitplanes was being written the code would look something like this...

```
for (i=0;i<plane_count;i++)
  {
  fwrite(bitplanes[i],bitplanesize,
  1,dest_p);
  }
```

At this point you'll have an Image structure and the image data written to disk. Notice incidentally that all the image's bitplane data gets collected together during this file writing operation and this of course is just what is needed for Intuition DrawImage() use.

Reading the image file's contents back is a little bit more awkward. What you have to do is allocate some space for an Image structure, read back the Image structure field values from the file, and then work out how much Chip memory is needed to hold the image data. Once this second lot of memory has been allocated you set the ImageData pointer in the Image structure to the returned address and read the image data into that Chip memory.

Remember that either or both of the Image structure and image data allocations can conceivably fail, so the image loading routine must take this into account. The LoadImage() example function (listing 1) that I've provided does this and only returns a valid (ie non-null) image pointer if both allocations succeed. Since the image loading routine must rely on dynamic memory allocation some means of deallocating the image structure and data memory must be provided in your program.

The UnLoadImage() function shown in listing 2, illustrates how to do this. With these type of image loading and unloading routines available very little effort will be needed to re-display your saved images. Listing 3 provides a code fragment which shows how the routines might be used.

These sorts of Image based approaches are fine if the program is just making 'internal' use of the images, but programs which store 'user created' images tend to adopt more sophisticated techniques based on the use of IFF files.

This is much more complicated business, but you can get further details from the RKM Libraries and Devices manuals. ***Paul***

solution ?

That cropping and scaling bit; using *ADPro 2.0.5.* I cannot enter fractional values for scaling – indeed if I import the IFF buffer I get a Not Enough Memory flag – and Crop does not give any visual indication of what I am doing. Being used to WYSIWYG DTP and word processing I had naively assumed that all that was required was to scan-it, import-it and print-it without having to jiggerypoke-it with expensive software. So the thrust is, can I do it with my existing set-up without spending more money? If not, what do I need?

Alan A Welch
Macclesfield, Cheshire

How can I put this gently? You see, er, well, um – oh, what the hell – the Geniscan hand scanner software is awful. Although the last mono hand scanner roundup we did was some time ago (issue 14 – the Datel hand scanner came a very poor last), the software has not been improved much since then. I couldn't get anything decent out of it other than mono scans of line art and as much as I would like to be able to help you with it, the best and most honest advice I can give you is to buy a more suitable hand scanning package like *AlfaScan* or *PowerScan*.

The Y resolution of the printer does have a bearing on the output inasmuch as printer dots at a 240 by 216 resolution will always be slightly rectangular – taller than they are wide. I said in my article that 24-pin printers were not very well suited to printing scans of photographs, I took it for granted that 9-pin printer owners like yourself would understand that their printers are even worse suited. The unequal output resolution means that rounding errors in the scaling are inevitable. If you want higher quality printouts, there is no other solution than to buy a higher quality printer.

As for *ADPro*, when you load a graphic it immediately converts it into true colour format, either 256 greys if the graphic in mono or greyscale, or 16.7 million colours otherwise. This eats up memory. To store a 1,600 by 1,024 pixel mono scan *ADPro* will require just over 1.5Mb of free memory. As you cannot enter fractional scaling figures, you must round to the nearest whole number. The Crop Visual operator has been supplied with all versions of *Art Department Professional* (*ADPro*), but *The Art Department* (*TAD*) didn't have Crop Visual, just Crop.

There are two ways of approaching a task, Alan. There are those who make do, which involves spending as little money as possible using cheap and underpowered hardware and software and much knocking of heads against walls in frustration and anger when they discover (but often refuse to face) the fact that they need to spend some money. Then there are those who don't rush off and buy the cheapest kit in sight but first investigate whether what is on offer will do the job to the standard they require, then decide whether they can afford it. If they can't afford it, buying cheaper kit that they can afford is almost always a bad idea because if it can't do what they want it to do, they have wasted their money.

Sorry to shatter your dream, but you need a better scanner, a better printer, a later version of *ADPro* and at least another 2Mb of memory. ***Jeff***

SLOW MOTION GAME

I have just finished programming a 26 thousand line game in assembler, so you can imagine my disappointment after testing it recently on an A530 based machine (with a 40MHz 68030 Chip) and it not working properly. The whole program seemed to run in slow motion. I think it could be one of two things: something to do with the blitter; or something to do with the stack. I recently read that there are two stacks used when in supervisor mode on a 68020 and above (Interrupt and Master), but I've not taken account of this. I therefore have some questions to ask:

1. What could be causing this fault?

2. Which memory location is the lowest that should be used after blowing out the OS? $C0 or $100?

3. What things can be done to improve compatibility between all current Amigas? (eg. clearing the VBR on 68010 and above)

4. How do crunchers work?

5. Do the CIA chips run at the same speed on all Amigas?

Any answers would be greatly appreciated.

Keith Combes,
Crew, Cheshire

1. Without seeing your program it's almost impossible to answer this. You're right about the two stacks, but, to be honest, it shouldn't make any difference as it should be irrelevant to you. It's almost certainly a case of not correctly setting up the system registers, and then suffering at the hands of the caches on the 68030. You might like to try disabling the caches on the A530 machine you tested it on, and trying it again to see if it makes any difference. Interrupts are likely to be another cause. I assume by the other questions you ask, that you simply take the interrupt vectors by writing to them rather than calling AddIntServer in exec.library. if this is the case, then you may not be handling GVP's things correctly, and could be hitting CPU performance that way. There really is an endless list of possibilities. You could send some of your setup code and blitter code to Code Clinic if you want it to be looked at.

2. Irrelevant. You should be loading into memory at a relocatable address using OS functions, and it should not matter where you are.

LISTING 1: A TYPICAL DISK IMAGE LOADING ROUTINE

```
struct Image *LoadImage(TEXT *filename_p)

{ /* DEALLOCATE MEMORY USING UnLoadImage() WHEN FINISHED */

FILE *source_p;

ULONG size;

struct Image *image_p;

if(source_p=fopen(filename_p,"rb"))

   {

     if(image_p=AllocMem(sizeof(struct Image),MEMF_ANY))

         {

            fread(image_p,sizeof(struct Image),1,source_p);

            size=((image_p->Width+16)/16)*2*image_p->Height;

            if(image_p->ImageData=AllocMem(size*image_p-
>Depth,MEMF_CHIP))

               {

                  fread(image_p->ImageData,size,image_p-
>Depth,source_p);

               }

            else {

               FreeMem(image_p,sizeof(struct Image));

               image_p=NULL;

                  }

         }

     fclose(source_p);

   }

return(image_p);

}
```

LISTING 2: LOADED IMAGES WILL NEED TO BE UNLOADED TO RELEASE MEMORY

```
void UnLoadImage(struct Image *image_p)

{

ULONG size;

size=((image_p->Width+16)/16)*2*image_p->Height;

FreeMem(image_p->ImageData,size*image_p->Depth);

FreeMem(image_p,sizeof(struct Image));

}
```

LISTING 3: THE DISK BASED IMAGE DISPLAY ROUTINES IN USE

```
image_p=LoadImage("ram:myimage");

if(image_p) {

      DrawImage(g_rastport_p,image_p,20,20);

      UnLoadImage(image_p);

      }
```

Gone are the days when people really *did* need to blow out the OS, because that extra handful of bytes were so vital. These days it's totally unnecessary, and you will be asking for problems with compatibility with other Amigas.

3. Use the OS. I recommend using AddIntServer to add your interrupts into the list. You will suffer a negligible performance loss by doing this and guarantee future compatibility. Allocate all memory using AllocMem. If you are going to hit the blitter and other custom chip registers, use the graphics.library WaitBlit, *not* your own. The graphics.library one knows how to deal with all flavours of the blitter, including a bug in the early ones, and will not affect system performance. Also, use OwnBlitter and DisownBlitter (also in the graphics library) before and after major blitter access. Do *not* use Disable() and Enable(), and you should not need to use Forbid() and Permit() - instead, raise your task priority to about 25, and you'll find that all will be well. You should *never* have to play with VBR. There is no need to do this, the value contained in this register should not matter to you, as you should use AddIntServer(). Finally, before hitting the display registers and loading your own copper list, open the graphics library and do this:

```
   suba.l       a1,a1
   move.l       GfxBase,a6           ;
graphics.library base, previously opened.
   jsr_LVOLoadView(a6)
   jsr_LVOWaitTOF(a6)
   jsr_LVOWaitTOF(a6)
   .. now it's safe to write to cop1lc and
other display registers ...
```

This will help your program to run with AGA machines correctly. There's stacks more to watch out for with regards to compatibility. Indeed, I could easily write an eight page article on the subject and still have more to say, but I hope that the above basic guidelines will be of some assistance.

4. Crunchers are simple beasts. When you crunch a program, the cruncher will apply a compression algorithm, such as those used in the "LHA," "ARC" and "ZIP" archivers to the entire file to reduce it in size. It then adds its own little program to the front of the compressed data which will uncompress it rapidly. When you load the program, it is this little header which runs first, unpacking the main program before running it.

5. Yes. ***Toby***

PARALLEL UNIVERSE

GENERAL

I bought an A500 back in 1988, then an A2000 in 1991, upgraded to Workbench 2 in 1992, and this year I bought an A1200. At all stages along the upgrade path (after the A500) my printer, an Epson LQ-500, didn't work with the installed software – by which I mean with the parallel.device in the DEVS: directory. The A2000 with Workbench 1.3 didn't work until I copied the parallel.device from my 1.3 A500; same again when I upgraded to Workbench 2; and, surprise surprise, the printer didn't work with the Workbench 3 A1200 until I copied the old 1.3 parallel.device into DEVS:.

I am slightly dumbfounded to find that I have used the parallel.device written in 1994 (or before?) to run a printer in 1994. I find it amusing now, but it was hell sorting out the problem at the time. I enclose a disk with the various parallel.device files and would be most interested if you can find the reason for the anomaly.

G J Laing
Muscat, Sultanate of Oman

Gremlins, Mr Laing. Like you, over the years I've gone from Workbench 1.3 to 3.0 and all that time I've been using my LQ-500 almost every day. Never had a problem. I installed and used the parallel.device files you sent me, and, using the standard EpsonQ driver, the LQ-500 works fine on my A4000 with all of them, including the proper Workbench 3 one. At times like these I find it helps if you stand over the computer and shout YOU B****RD! very loudly while waving your fists about in the air. (Please note that *Amiga Shopper* will not be held responsible for any emotional distress your machine may suffer – Ed) ***Jeff***

KWICKBACKUP DANGER?

GENERAL

I used the KWICKBACKUP utility (supplied on your coverdisk with issue 23) to back up a hard disk partition containing my database records. When I tried to restore this from the floppy, on to which it had been backed up, everything worked as expected except that my largest file, a database of 970 records entitled Record library, ended up being restored to 948 records. The balance of 22 records however is still in there somewhere, because when trying to add a new record it moves to record number 971. The database is part of Platinum Works which has, and continues to work satisfactorily.

Bill Kernaghan
Bangor, Co Down

Looks like the end of a large file has gone missing somehow and I doubt whether the missing records are still in the file. I think the gap from 948 to 971 is significant, but what has probably happened is that the field that held the current number of records was written properly (this count could be stored either in the front part of your suspect file, or perhaps in a separate database support file). Either way, your database program in reading that value is working out subsequent record numbers from that stored value, despite the fact that it now presumably doesn't reflect the contents of the file.

The worrying thing is that data seems to have gone missing from your file, but without knowing

CD32 CONVENTION

HARDWARE

I want to connect a CD32 to an A1200 via the serial ports. Where do I get a cable and software? Will this solution enable me to use the CD32 on the A1200 as a *dummy* CD-ROM drive, giving me a physical icon on my Workbench screen, rather than a command line driven interface? Can I connect the CD32 to a 1940 multiscan monitor?

Martin Fleming
Paisley, Scotland

My son has a CD32. Is there any way I can link it to my A1200? I don't expect to be able to run CD32 software on the A1200, but I would like to be able to access discs like CDPD. I've read about SerNet and CD32. What hardware and software are required?

Nick Culpin
Stalybridge, Cheshire

I would like to keep my present Amiga, an A1500, but would like to add to my system a CD-ROM drive and AGA Amiga that would be able to access the hard drive on my A1500. I have heard of a program called SerNet that connects a CD32 to another Amiga via a null modem cable and the serial ports. Would my A1500 be able to use the CD32 as a CD-ROM drive? I mean, would I be able to copy files from the CD32 to the A1500? Could the CD32 use the floppy and hard drives of my A1500 to run AGA software?

Grant Laing
Edinburgh, Scotland

To connect a CD32 to another Amiga you first have to buy some extra hardware for the CD32 to give it a serial port. Plug a null modem cable into this and the other Amiga's serial port, run SerNet and the two can exchange data and run software from each other's storage devices. It's a bit slow, but it's cheap and it works well. Brian Fowler Computers (☎ 0392 499755) sells a CD32 Add-On Port for £29.99, the null modem cable and the SerNet software will be extra.

To run programs stored on CD on your Amiga you would first have to copy the program from the compact disc in the CD32 to the Amiga (using the standard Copy command from a Shell or by dragging icons on the Workbench), saving to RAM, floppy or hard disk. Then you would run them as normal. To run programs stored on your hard disk on the CD32 you would have to copy them from the hard disk to the CD32's RAM disk, then run them as normal – by double clicking the program's icon in other words.

Keep in mind that you will need an extra mouse to drive the pointer on the CD32. Ah yes, and Mr Fleming, I'm afraid the CD32 won't work with your 1940 monitor, it can be connected only to a TV set, or CBM 1084/5 or Philips 8833 monitor (or similar). ***Jeff***

the formats of the files that you provided, or the contents of the apparently lost records, there is no way to tell exactly which parts of the file (or files) have been truncated or lost. I've not heard of any other problems connected with this utility, but to my mind pessimism is the only safe policy – other users should take note in case this turns out to be the first occurrence of a more general Kwickbackup reliability problem. If anyone else out there in Amiga-Shopper-land had any problems like this write and let us know! ***Paul***

AMIGATEX STILL GOING

SOFTWARE

In issue 11 of *Amiga Shopper* I read a review of *AmigaTeX*. This is exactly what I now need, because I have to produce documents with maths symbols and I don't want to set them by hand in a DTP or WP package, but I have seen no update reviews, nor any advertising for it. I suppose I could phone the company that produced it back then, but I don't fancy speaking for 10 minutes across the Atlantic just to hear what I already know: "Sorry, this product is not supported any more." Can you point me in the right direction?

Konstantinos Margaritis
Athens, Greece

AmigaTeX is indeed still produced and supported by the people who write it: Radical Eye Software, Box 2081, Stanford, CA 94309, USA. There is no UK distributor for it these days, which is why you never see it advertised or reviewed in UK magazines. ***Jeff***

ROCGEN PLUS FIX

VIDEO

I have a RocGen RG300C (ie. a RocGen Plus) genlock for my A500 Plus. I am thinking of changing it to an Amiga 1200 with a 60Mb hard disk. Will my genlock still be compatible with my new A1200? If not, what can I do to make it compatible? Please help, because I don't want to spend any more money – I've only got enough for the A1200.

Andrew Hunn
Caister-On-Sea, Norfolk

It is more than likely that your RocGen Plus genlock won't work with your new A1200. However, Bucks-based Visual Products offer a conversion service to upgrade older RocGen Plus genlocks to work correctly with Amiga 1200s – for a flat fee of £40 (including P&P). You can get more details from Visual Products, 34 Greenlands Lane, Prestwood, Bucks, HP16 9QU. ☎ 0494 890601. Fax: 0494 863894. Unfortunately this means that you'll *have* to spend more money – but at least you won't have to buy a brand new genlock. ***Gary***

ASSEMBLY TROUBLE

CODING

I am having trouble in Assembly Language programming. I can call Libraries, and do general programming tasks, but I cannot actually "use" anything. How do I properly use the libraries to write a program? How do I even start? Is there a book that you could recommend? I have the includes and autodocs RKM, but that just contains lists and no explanations.

Also, I would like to get into 3D programming. Would buying *Amiga 3D Graphics in BASIC* by Abacus help? Will there be a series of explanations and tutorials in *AS*? I am quite adequate at maths.

James Simmons
Swadlingcode, Derbyshire

A tough question. As to how you start, you have to think of a program which you would like to write, and then consult the appropriate documentation to find out how to best achieve that aim. What you really need is the Libraries RKM, edition 3. This explains in great detail each of the component parts in the Amiga OS, such as Windows, Screens, Gadgets, the Exec and so forth. Unfortunately for assembly language programmers, most of the examples are given in C, so a basic understanding of C is required in order to make the best of the book. The Libraries book is quite expensive, at around 30 pounds, but it is the best reference guide you can get on the subject of the Amiga.

As for the 3D problem, *Amiga 3D Graphics in BASIC* is likely to help you best if you intend on working in BASIC! Translating BASIC to assembly language is tough, although some of the basic concepts will carry across. Most large bookshops will sell books on computer graphics, and 3D computer graphics, and describe the maths behind them in greater detail. This information, together with the data in the Libraries book on drawing graphics should get you well on your way.

Unless speed is incredibly important to you, I would seriously recommend considering using 'C', or some other compiled high level language, as a language for this sort of thing, as it's easier and quicker to program and removes some of the pain of dealing with floating point numbers, which are a pain to do in assembly language. 'C' also gives you access to lots of mathematical functions which can help you. Good luck! ***Toby***

RE-APPRAISAL

GENERAL

After reading the test you did on the Tri-Code RGB to video converter in *AS 37* I'd like you to do a similar appraisal of GVP's G-Lock (ie. quality of composite / Y/C and, in particular, component output).

D Latham,
Macclesfield, Cheshire

I reviewed G-Lock way back in *Amiga Shopper 24* and at the time I wasn't wildly enthusiastic about the G-Lock, though this was more because of its cost at the time and the way it worked rather than the quality of its video outputs. However, G-Lock does not have a component output (if you are referring to a YCrCb component signal such as is used in Betacam systems, for example) so I'm afraid I can't actually tell you how good such a component output is. The composite and Y/C signals were about what you would expect from a unit at this price – not the best, but certainly good enough for at least semi-pro work. ***Gary***

LEAVE IT OUT

BEGINNERS

Could you explain how to have my most often used programs available to 'double click' straight from the main Workbench window.

Andy Betesta
Spondon, Derby

Just select the icon and then choose Leave Out from the 'Icons' menu. ***Paul***

INCLUDE LIBRARIES

CODING

I recently purchased a copy of your book *Complete Amiga C*. Having had my appetite whetted, I started to look for more information on the Commodore Include libraries supplied with the book. When I noticed that your magazine was running a C tutorial I decided to buy it. My problem relates to your April issue, where some code for using a file requester was shown. I had difficulties compiling this code, and I noticed the article referred to a file called amiga.lib, which I can't find anywhere. Therefore,

1. Was the amiga.lib file supposed to be

included with *Complete Amiga C*, and if so, what do I have to do to get hold of it now?

2. If the amiga.lib file was not supposed to be included, where can I get it from?

3. The article referred to the *Amiga Developers Kit* – what precisely is this, and do I need it?

C.P Stead,
Much Marcle, Herefordshire

1. I have just tried recompiling this program under DICE myself, and it worked fine. I suspect that your DICE setup is not entirely correct. "amiga.lib" is a special file containing information allowing programs to talk to the system libraries, and also a heap of other additional functions which are not present in the libraries. When Commodore supply the latest include files and autodocs, they provide a file called amiga.lib with the updated information in it. This file is directly compatible with SAS C, as used by Commodore in House, but not with DICE. Dice has its own version of the amiga.lib, which sits in the DLIB: assign, called amigas20.lib. If your DICE setup is correct then you should have no problem compiling the file requester example. Check that your DLIB: drawer has this file, so to answer your question, amiga.lib should not have been included.

2. The latest amiga.lib file is supplied with the most recent Amiga Developer Kit, and DICE comes with a utility to convert it to DICE format. Here is the exact sequence from the Shell, for example, to convert the 2.04 amiga.lib ready for DICE use:

```
libtos amiga.lib dlib:amigas20.lib
```

3. The Amiga Developer Kit 3.1 contains the complete 3.1 includes and autodocs, a whole host of utilities for software development, loads of example programs, and of course this magic amiga.lib file! Basically, it's worth its weight in gold, and fortunately doesn't *cost* its weight in gold. It's available for only 23 pounds from Commodore UK. You'll need to write a cheque out made payable to Commodore Business Machines (UK) Ltd., and send it to this address together with a covering note explaining that you're after the 3.1 developer kit:

Sharon McGuffie
Commodore Business Machines UK Ltd.,
Commodore House, The Switchback, Gardner Road, Maidenhead, Berks SL6 7XA

Toby

THAT RINGS A BELL



After finding an old laser printer sitting in the office at work, I decided to bring it home and plug it into my A1200 – 2Mb RAM, 170Mb hard disk, external floppy drive. The printer is badged British Telecom MP2006, but the self-test says it is an Oki Laserline 6 Elite, which has 128K page memory available. There is a 384K RAM expansion in the printer, giving it 512K of RAM in total.

When I print from *Wordworth 3.0a*, some large characters do not get printed. The same thing happens with *PageSetter3*, although not quite so bad. This does not happen with small documents which contain only one font in a small point size, except when a graphic is included in the document, in which case even small fonts have characters missing.

Does my printer and/or Amiga need more memory perhaps?

Jonathan Moore
York

You got it in one, Jonathan – your Amiga needs more memory. Another 4Mb or 8Mb up the trap-door will make the missing characters problem almost completely go away. I say almost completely because Compugraphic fonts were not designed to be printed in point sizes over about 60pt, and while you can normally safely get away with about 100pt, at anything over this size the problem can sometimes return. Wherever possible, use PostScript Type 1 fonts if a package supports them, as this type of scalable font is much happier about being enlarged than Compugraphic.

Jeff AS

FILL IN AND GET US TO ANSWER YOUR QUESTIONS

If you send in a question for the Amiga Answers experts, please fill in and include the form below (or a photocopy if you don't want to cut up your magazine). And please, also make sure that you include all the relevant details – version numbers of software and so on – so that we have the best chance of helping you. **If you have *several* questions in different fields that should be addressed to more than one of our experts, please send in your queries on *separate* forms.**

Send your form and question to: Amiga Answers, *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Name: ____________________

Address: ____________________

____

____

Your machine:

A500 ☐ **A500 Plus** ☐ **A600** ☐ **A1000** ☐ **A1200** ☐

A1500 ☐ **A2000** ☐ **A3000** ☐ **A4000** ☐

Approximate age of machine: ________

Kickstart version (displayed at the "insert Workbench" prompt)

1.2 ☐ **1.3** ☐ **2.x** ☐ **3.x** ☐

Workbench revision (written on the Workbench disk)

1.2 ☐ **1.3** ☐ **1.3.2** ☐ **2.04/2.05** ☐ **2.1** ☐ **3.0** ☐

PCB revision (if known). Do not take your machine apart just to look for this! ________

Total memory fitted (see AVAIL in Shell for Workbench 1.3) ________

Chip memory available (see AVAIL in Shell) ________

Agnus chip (if known) ________

Extra drive #1 (3.5in/5.25in) as DF__: Manufacturer ________

Extra drive #2 (3.5in/5.25in) as DF__: Manufacturer ________

Hard disk: ____Mb as DH__: Manufacturer ________

Extra RAM fitted – type, size in Mb and manufacturer ________

Details of any other hardware which could help us to answer your question:

____

Now, use this space to describe your problem, including as much relevant information as possible. Please continue on a separate sheet if necessary.

____

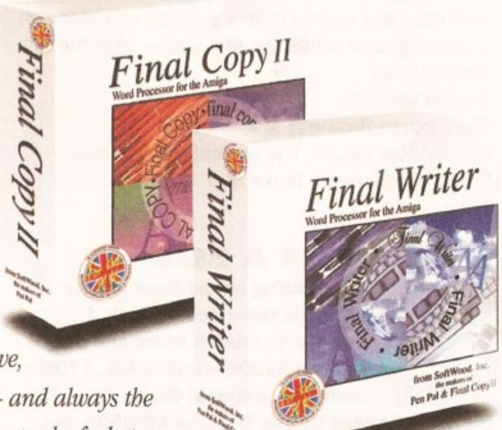
AS 40

At SoftWood we l

...we just don't rest on them!

When your software repeatedly wins the highest accolades in reviews worldwide, what do you do?

Work even harder to stay ahead of course! New Final Writer Release 2 is the latest result of our intensive development - it's even easier to use, and even more powerful. It's the best there is, and it's designed for those with the best Amigas. But if you don't have a hard drive system, don't despair, we can still help. At SoftWood we offer you a choice of two Word Processor/Page Publishing packages. But, why TWO?



Well, this means that whatever specification Amiga you have, SoftWood have the perfect solution for your requirements - and always the most powerful possible for your system. Final Copy II is at the peak of what can be achieved when running with twin floppies, it's not possible to offer more without losing performance. Final Writer is the first and only hard drive compulsory Amiga word processor; the only package that doesn't make compromises to be floppy compatible!

The SoftWood Advantage...



*Final Copy II (upgradable to Final Writer as your needs grow) and Final Writer are the only word processors that give you **PerfectPrint**™ - a unique printing advantage giving silky smooth Industry Standard Adobe™ Type 1 or Nimbus Q scalable outline fonts direct to **any** printer (even dot matrix and ink jet), in both landscape and portrait. Others use a restrictive and unnecessary jumble of different fonts with complex driver programs for outputting to various printers. The launch of Final Copy II introduced **FastDraw**™ - a special set of structured drawing tools for constructing lines, borders, arrows, circles etc. directly on the page.*

Final Writer, extending innovation...

*Now, as others are just starting to add similar features, saying they're 'revolutionary', Final Writer extends the innovation further with **FastDraw Plus**™ - adding even faster and more functional options, including a new rotate command. Final Writer Release 2 is again leading the way with the introduction of **TouchTools**™ and **PowerUserBar**™ technologies. These features give the user a definable area at the top of each document window where up to eight "one-touch" button strips can be configured. Each strip contains easily customisable sets of functions giving instant access to all the major commands/features - with a simple click of the mouse! There is even a set of buttons allowing "one-touch" selections of font style and size plus variations including* Plain, **B**old, *Italic* and U̲nderline!

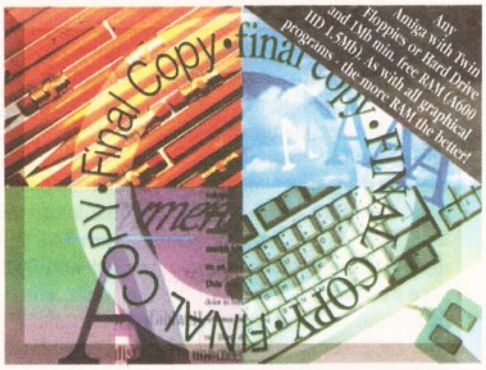
It's no wonder we've received top reviews, ratings and awards from all the leading magazines...

"What the Papers Say..."

Amiga Pro... *"In comparison (to Wordworth 3), Final Writer 2 is slick, solid and reliable and... is a damn site more usable"* **Amiga Format...** *"Final Writer is a joy to use"* **Amiga Shopper...** *"Final Writer is the closest thing to MS Word to appear on the Amiga"* **Amiga Computing...** *Final Copy II was voted by the readers as "Best DTP Package"* **Amiga Format...** *"Final Writer is a word processing package the Amiga community as a whole can be proud of"* **Amiga Format...** *Final Copy II is "The Best Word Publisher"* **Amiga User International...** *Final Writer is "a powerful program that produces excellent results"* **Amiga Computing...** *Final Writer is "easily the most configurable Amiga WP ever"* **CU Amiga...** *Final Writer is the "most powerful WP ever to grace the Amiga"* **Amiga Format...** *"I'd go for Final Writer over Wordworth (3)"*

The Highest Accolades...





Final Copy II Release 2

Our word processors go beyond simply producing normal letters and documents, at which they naturally excel, and progress into a world where "how the whole document looks" is just as important as "what it says". Admittedly, this can be achieved with Desk Top Publishers - but they're not so easily used as word processors, especially when a good looking letter needs creating quickly - they're far too cumbersome.



Final Copy II offers the perfect balance between the two requirements. Ease and speed of use, combined with total control over the perfect final printed presentation.



Complete control over how documents look, now *you* have it at your finger tips on your Amiga!

Features include: **FastDraw**™ (on-screen drawing tools for the generation of borders, boxes and lines or arrows at any angle), Multiple Newspaper Style snaking columns, **PerfectPrint**™ (the unique ability to use **PostScript**™ outline fonts on absolutely any printer in either portrait or landscape) and Text Auto Flows around graphic objects and imported pictures (placed anywhere, scaled *and* cropped) with no loss of printing quality. Text can also be printed over graphics! It's features like these that explain why some professional magazines, with 200+ pages, are produced entirely with *Final Copy II*! Publishers, and many others, have quickly discovered...



No other Amiga Word Processor has all the capabilities *Final Copy II* users have always taken for granted!

SoftWood Direct Price: **£49.95**

SoftWood Direct...*the **best** software at the **best** price*...On

C PROGRAMMING



Toby Simpson points the finger at pointers, and offers a beginners course to these rogue beasts with a few hints on avoiding the most common pitfalls.

It is very time consuming to move information around. Inside your computer information is moving around continuously, from disk to memory, memory to memory and so forth. The Amiga is a complex beast, and many programs have access to the same data as others. As you can imagine, if we had eight programs that all required access to certain information held in a 32K block of memory, it would be extremely wasteful for each one to have its own copy of it. Not only would 232K of memory be wasted, but a considerable length of time would be involved in making those copies in the first place. OK, so what is the moral of this story? Well, in situations like the above example, it makes more sense for there to only be the one block of information, and for each program that wanted to use it to be told where it is, to get a POINTER to it.

C is an interesting language, it gives the most amazing scope for making serious errors, and quite a large chunk of these errors are pointer related. Pointers are an integral part of the C programming language, so it's almost impossible to write a program larger than a few lines without using pointers in some form or another. Pointers are also one of the single most difficult concepts for beginners to fully grasp. Programmers that have previously used languages such as BASIC will not have had the need to deal in pointers on such a level as they will in C. So, let's discuss pointers in greater detail and try and remove some of the mystery of them. What exactly is a pointer? Well, in its simplest form, a pointer is a normal variable which contains a special value: A memory address. This memory address is where some information is stored, the pointer actually "points" to the data. Let's whip up a quick example to help illustrate this:

```
#include <stdio.h>

void main(void)
{
 long my_variable = 10;
 long *my_pointer;

 my_pointer = &my_variable;

 *my_pointer = 5;

 printf("My variable is %ld\n", my_variable);

 return;
}
```

If you type in, compile and run the above program, you'll observe that the value that is shown on the screen is 5, not 10 as you might expect. As you can see, we declare the variable my_variable as a long integer, and assign it the value 10. We then do not appear to directly alter the value of that variable at all, and yet, when we show it on the last line, it is 5. Well, it doesn't take a genius to guess that pointers are guilty, and that the 5 is coming from the line:

```
*my_pointer = 5;
```

OK, so what exactly has happened? Let's go back to the second line of the program, where we declare a variable called my_pointer:

```
long *my_pointer;
```

This defines a variable called "my_pointer" which is *a pointer to a long integer*. It does not actually *contain* a long integer, it contains a memory address where one might be found. The * symbol makes this variable a pointer. We can apply the * symbol to any variable type in this way, as we'll see later on. Initially, we have not assigned our pointer a value. Not initialising pointers is one of the ways in which you can go seriously wrong, we'll discuss that when we deal with common pointer pitfalls. One line further down, we assign a value to the pointer:

```
my_pointer = &my_variable;
```

If you read the ampersand symbol & as 'the address of', then you can't go far wrong:

```
my_pointer = the address of my_variable.
```

'my_pointer' now contains the address of the long word variable 'my_variable' – a pointer to it. The line which actually then does the magic and changes my_variable from 10 to 5 is this:

```
*my_pointer = 5;
```

In this case, read the * as 'the value pointed to by', so we have:

```
the value pointed to by my_pointer = 5;
```

Since we are pointing directly at the memory location where my_variable has its value stored, we can directly manipulate it in this manner. In fact, any operation we can perform on the variable itself, we can perform using the pointer to it; for example:

```
if (*my_pointer == 5) printf("Value was 5\n");
```

Now we have a very basic understanding of pointers, let's just look at a simple real life application. Let's write a function which exchanges the contents of two long integer variables. Beginners very often write this sort of function a bit like this:

```
#include <stdio.h>

void exchange(long, long);

void main(void)
{
 long variable_1 = 10;
 long variable_2 = 20;

 exchange(variable_1, variable_2);

 printf("1 = %ld, 2 = %ld\n", variable_1,
variable_2);
}

void exchange(long variable_1, long variable_2)
{
 long temp;

 temp = variable_1;
 variable_1 = variable_2;
 variable_2 = temp;

 return;
}
```

If you compile and run this program, you will notice that the function 'exchange' does nothing, and variable 1 and 2 remain un-exchanged. Well, that's not entirely true: exchange does indeed exchange the variables. But it exchanges its own *copies* of them, therefore not effecting the parent ones. This sounds like a job for pointers. If we were to pass POINTERS to the variables in question instead, then we could directly manipulate them. Let's make a small change to the exchange function so that it looks like this:

```
void exchange(long *variable_1, long
*variable_2)
{
 long temp;

 temp = *variable_1;
 *variable_1 = *variable_2;
 *variable_2 = temp;

 return;
}
```

Now we are saying that the two parameters of this function are pointers to long integers. We then swap the values over, and return from the function. Since we have pointers to the parent variables, we are directly altering them, rather than our own local copies. A change to our function in this way also requires a change in the way in which we call it, as of course we now have to actually pass the function pointers to the variables we wish to swap, rather than the variables themselves:

```
exchange(&variable_1, &variable_2);
```

We are passing 'the address of' variable_1 and 'the address of' variable_2 in. One other small change to the program in order to make it run properly now, is to alter the function prototype for the exchange() function at the start of the program before main() to:

```
void exchange(long *, long *);
```

This defines exchange as a function which does not return a value, but takes two pointers to long integers as parameters. The 'exchange variables' program will now function correctly. Let's look at another example and write a program which converts a string of alphabetical characters to lower case:

```
#include <stdio.h>
#include <string.h>

void main(void)
{
 char test_string[128];
 char *c_pointer;

 strcpy(test_string, "This will Loose ALL its
CAPITALS!");

 c_pointer = &test_string[0];
```

```
while (*c_pointer)
  {
  if (*c_pointer >= 'A' && *c_pointer <= 'Z')
     *c_pointer = *c_pointer + 32;

   c_pointer++;
   }

 printf("%s\n", test_string);

 return;
}
```

This should appear reasonably straightforward now. First we define an array of characters – up to a maximum of 128 elements – then we define a pointer of type 'char', which means that it will point to a character somewhere in memory. We then copy a string into our test string containing some capitals, using the strcpy() function, which co-incidentally has the prototype:

```
char *strcpy(char *dest, char *source);
```

It's quite simple – it takes two pointers to strings, then copies one to the other character by character, and returns a pointer to the destination string. We could write our own strcpy very easily:

```
void strcpy(char *dest, char *source)
{
 while ( (*source++ = *dest++) != 0) ;
}
```

Neat isn't it? We copy one character from the source string to the destination, and increment the two pointers so that they point to the next character. If the value copied was a 0, then we have come to the end of the string, and the function returns.

Anyway, I digress. Let's get back to our program which made all the characters lower case. After we copy a string across, we make the pointer c_pointer point to the first character in the array:

```
c_pointer = &test_string[0];
```

We can in fact simplify the above to just...

```
c_pointer = test_string;
```

... although the first one is much easier to read and understand, and you're less likely to get confused between pointers and real values. The second one works because we are dealing with an array and, when used in this way, it is assumed to mean a pointer. Then we do the actual work itself, and change any upper case characters to lower case:

```
while (*c_pointer)
  {
  if (*c_pointer >= 'A' && *c_pointer <= 'Z')
    *c_pointer = *c_pointer + 32;

  c_pointer++;
  }
```

The while loop works because any value which is not zero is assumed to be true, so if we say while (*c_pointer), the character pointed to by c_pointer is read, and if it is not zero, the while loop happens. Since strings are terminated with a zero, as soon as we reach the end, this will evaluate to FALSE, and the loop will end. We then use an IF to see if the character is between A and Z. If it is, we add 32 to it, which has the effect of converting it to lower case. Finally, we add one to our pointer so that it points to the next character in the string. Whilst we're at this point, there is in fact a C function for checking if a character is upper or lower case. If you include the file ctype.h, then you have access to functions such as "islower()" and "isupper()" which return TRUE or FALSE depending on the character value passed to it. In our example above, we could change the IF line to read:

```
if (isupper(*c_pointer))     *c_pointer =
*c_pointer + 32;
```

A much neater result, and of course, you're less likely to have made errors.

So pointers are quite simple once you understand the usage of the * and & symbols. As previously mentioned, it's best to actually *read* the symbols as what they mean. That way your mind helps you to understand the programming flow. A brief reminder:

- Read the ampersand symbol & as 'the address of'.
- Read the * as 'the value pointed to by'.

After a while of doing this, understanding which does what, and where to use it becomes much more straightforward. C programs using the Amiga operating system, to do even simple operations such as opening a file, or opening a window or even allocating some memory, are jam packed full of pointer references, so a good thorough understanding is absolutely necessary. We've dealt with pointers to normal variable types, but when programming the Amiga, more often than not, you will be dealing in pointers to structures. This brings us back to the first paragraph of this month's C Programming – where we described holding a pointer to information rather than copying it around. This reflects in most of the Amiga system calls. For example, to open a window using the intuition.library's "OpenWindow()" we would prepare a structure containing information about the appearance and function of our window, and then pass a pointer to that structure to the operating system, which will then access it to get the information that it needs to open the window. If we painstakingly passed *all* of the information in, we would end up with a function with so many parameters it would be ridiculous:

```
OpenWindow(uword width, uword height, uword
left, uword top, uword d_pen, uword b_pen,
ulong flags, char *window_title...., etc
etc...)
```

And even with this we've resorted to using a pointer to point to a string which contains the title of the window. If we'd have passed on this we might have had to have passed each character in one at a time... a highly unpleasant prospect. As it actually is, OpenWindow is a whole bunch simpler. Here is the function prototype for OpenWindow():

```
struct Window *OpenWindow( struct NewWindow *
);
```

We pass OpenWindow() a pointer to a fully initialised NewWindow structure, and it (hopefully) will open the window, and then pass us back a pointer to a Window structure, or 0 if it failed. We then keep this pointer somewhere safe, and quote it when we need to perform a window operation so that the operating system knows which window we mean. When we want to close it, we just use:

```
void CloseWindow(struct Window *)
```

And all the time, no-one is copying any sizable amount of information anywhere. We create a structure, and give the operating system a pointer to it. It then creates a structure having opened the window, and gives us a pointer to that. The most that is moving around is a pointer or two, and since a pointer consists of 4 bytes, this is a most efficient way to operate.

As you can see, pointers in C give us a powerful way of allowing different parts of a program to share information without actually having to move that information anywhere – just the simple passing of pointers around. AS

JARGON BUSTING

AutoDoc – the basic documentation on the operating system functions present on the Amiga. It is available on paper in the form of the *Rom Kernal Manual: Includes And AutoDocs, Edition 3*, published by Addision Wesley, or in electronic form as part of the *Amiga Native Developers Kit*.

BASIC – Beginners All-purpose Symbolic Instruction Code. A dated computer language. It's very simple to learn and use, but not recommended for serious programming tasks.

THE COMMON POINTER PITFALLS

Other than Assembly language programming, C is pretty much the only common computer language which gives you such a power of control over pointers in this way. Such generosity on C's part is not all good news of course – it never is! C is quite a low level language on the great scale of things and, as such, it can be quite easy to make serious errors when using pointers. In almost all cases, it is either a case of mistaken identity (incorrectly using a pointer), or not initialising pointers correctly and using one which points to the wrong place. Since pointers can point to *any* area in memory, if you put a random value into one and then stored a zero there, you are effectively taking random pot-shots into your memory. You might be lucky, and hit an unused bit. On the other hand, you might not be that lucky and corrupt your hard drive, source code, or crash your computer – the list of possible nasty outcomes is, sadly, endless. So great care must be taken when using them. The most common two errors when using pointers are described below:

Declaring pointers on the stack for beginners (and even experts for that matter): a common C programming problem in general is forgetting that variables declared locally to functions are on the stack, and therefore vanish when the function exits. And, furthermore, they are not automatically initialised – they will get random trash values depending on what was on the stack before. If you want a pointer to start with a value of zero, *set* it to zero.

Miscalculating pointer offsets: another common problem with pointers is forgetting what type they are. If you have a pointer of type "long", declared like this:

```
long *my_pointer;
```

And you do:

```
my_pointer++;
```

You might expect the pointer to be incremented by 1. In fact it is incremented by 4, which is the number of bytes of memory required to store a long. This might sound wrong, but of course it is not as the pointer now points to the next long. If our pointer was char *, *then* it would have been incremented by 1. The pointer is actually incremented by size of (type). So, if you had a pointer to Node structures, it would go up by size of (struct Node) every time you incremented it. So, be warned, be very careful with pointer arithmetic. It's also shows why neatly programmed C is the only way of writing programs. Use meaningful variable names, keep code neat, and you won't get lost in pointers.

Backgrounds are in

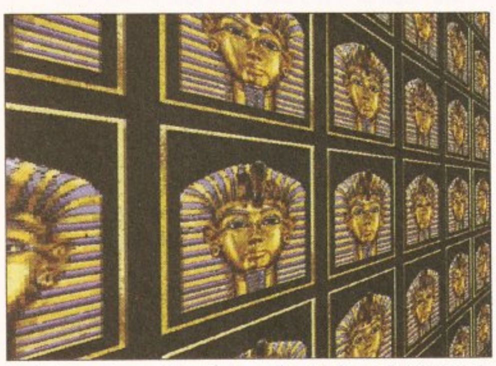
Behind every great graphic there's a great background. Well, maybe not, but it's a good introduction to Gary Whiteley's tutorial on how to make backgrounds for desktop video and other Amiga applications.

Why bother with backgrounds, you may ask yourself? Well, imagine you've just got the job of making a presentation to your local Chamber of Commerce to explain why your town needs to get to grips with the prospects of exporting goods to the emerging ex-Soviet nations. You already know that it's going to be Amiga-based, but you've done a few tests and the results don't look good... plain text on a plain background certainly isn't very eye catching. So what do you do? Make some backgrounds, that's what, and use them to spice up your presentation graphics. Then you can output your new-look images to video, use them in DTP work, for 35mm slide production or for whatever other purpose you need them for.

But how to make the backgrounds? Or indeed do they have to be *made* at all? Perhaps there's an off-the-peg solution readily available? From gradient fills to JPEG images, digitised video stills to 3D specials, there are many ways to make and utilise backgrounds. Mostly, backgrounds will be used for 2D and 3D animation, desktop presentation, video captions and titling purposes, but there's also scope for using the results in desktop publishing and even some programming applications. What follows is a round-up of some of the ways of producing or obtaining background images, all of which can help improve your image.

THE PAINT SOLUTION

I'd hazard a guess that every Amiga owner with even a passing interest in graphics has a copy of one or other of the available paint programs in their software collections. I'd even go so far as to speculate that this paint program is more than likely to be *Deluxe Paint*. Which is great, because as well as being a fine (if aging) paint program with many diverse applications it can also be used to make or edit a variety of backgrounds. Making backgrounds with a paint program lets you stretch your artistic imagination to its limits, especially if you are one of the fortunate owners of an AGA Amiga with an AGA paint program (*DPaint IV AGA*, *Brilliance* or *Personal Paint*) or, even better, you have a 24-bit graphics card (e.g. Retina, Picasso, Piccolo, IV-24 or OpalVision) with a full-blown 24-bit paint program. From simple fills to complex brush stamping, subdued diagrams to subtle designs and even straightforward frames for enclosing text, paint software gives you full rein on background creation. Go to it – but bear in mind that it is the message (and not the medium) which is important. A computer is just a tool to get a job done, not a machine which dictates how the work will look. You might even want to make a few rough sketches before you start, just to crystallise your thoughts into block shapes and simple layouts.



Paint programs like Deluxe Paint IV and Brilliance are great for making backgrounds.

One of the advantages of *DPaint* is its Perspective operations, which can be used to quickly produce some snazzy-looking backgrounds without a great deal of hassle. Some other paint programs have similar effects, but I reckon *DPaint* still rules the roost on this count. On the other hand, if it's specialist high-quality backgrounds and effects that you require, then you'll probably want to take a look at one of the 24-bit cards and a top-class paint program like *TVPaint* or *OpalPaint* (as supplied with the OpalVision card).

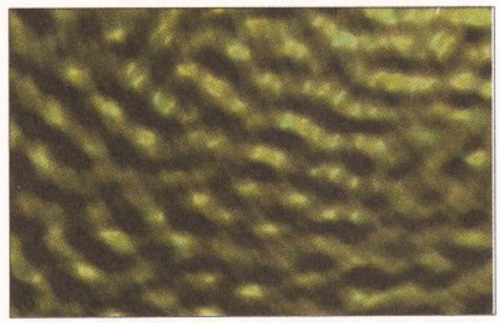
GRAB-A-BACKGROUND

If you are artistically challenged – or just plain lazy – a simpler, but far more expensive, way of getting backgrounds into your Amiga system is to grab them by electronic means, whether from video or by scanning photographs and other printed matter. There is a wide choice of both video digitising and scanning hardware available for the Amiga in a range of different price brackets, but expect a top-quality video digitiser to cost from around £300 and a good flat-bed colour scanner to be between the £700-£900. Don't discount cheaper digitisers, however, as eminently workable results can be obtained from sub-£100 digitisers like Rombo's Vidi Amiga 12 if you have a suitable VCR (with solid freeze-frame) and your requirements are less stringent than those of professional or semi-professional video-makers and desktop presentation producers. Try scanning or digitising such common household objects as lightly crumpled aluminium foil, J-Cloth, woodchip wallpaper, cork floor tiles, carpets, table tops, vinyl floor coverings, brick walls and any other object happy to pose for your video camera or scanner. Make sure that you don't scratch the scanning surface though, or all your future scans will have built-in surface noise too!

Once scanned, the images can be processed and converted to your heart's content, and saved for that rainy day when you need something weird and wonderful for the latest video title you're doing. There's also another way of grabbing backgrounds, this time direct from the Amiga itself. For instance, perhaps you have a DTP package that you've used to make a document with and you'd like to use a screengrab from it as part of another design, perhaps for an illustrated talk on DTP that you're giving. How do you do it? Simple – get a PD screengrabber utility like *GrabIFF* or *QuickGrab* and use it to capture the screen/s you need, then load them into your paint or presentation program and cut them up to get the results you desire. I use such screengrabbers regularly to compose images for this magazine, as well as to occasionally produce wraps for 3D objects.

PROCESS YOUR OWN

Image processing software is one of the great saviours of the background creator. In addition to performing such basic, but essential, tasks as converting images from one format to another,



If the 3D program has algorithmic texture support, then the backdrop possibilities seem endless. Here Essence and Imagine 2 are put to good effect rendering a single plane for a backdrop.

scaling and changing resolutions and adjusting the colour balance, brightness and orientation of an image, image processing is often used to take a poor image and turn it into something much more interesting. Image processing programs (I'm talking about programs such as *Art Department Professional*, *ImageFX* and *ImageMasterRT* here) contain such manipulative goodies as emboss, dithering, sharpen, blur, displace pixel, mosaic, line art, spiral, implode, antique – the list goes on.

These effects should be used with extreme care though, because backgrounds should be in the *background*, not shouting louder than the up-front messages and information. Sometimes all that's needed to turn a scanned or digitised image into a suitable background is to 'knock it back' – in other words make it darker – but you have to use your own judgement as to what *your* backgrounds need. Oh yes, and most image processing software usually includes a background option or two of its own. These are generally speaking along the lines of gradient fills, with options for fill angle and colour ranges.

Gradient fill routines are obviously popular in many graphics programs, turning up in both paint and image processing software, but they aren't necessarily a very good choice for backgrounds. Maybe they look a bit old-fashioned, perhaps they're just plain dull. Whatever, don't overdo the graduated backgrounds – particularly if you've only got a limited colour palette and resolution to play with – because in my opinion there's little that



One of the multitude of great IFF backdrops supplied ready for use with Scala MM.

looks worse than a full-screen dithered gradient in just eight colours.

BEAUTIFULLY PRESENTABLE BACKGROUNDS

Some desktop presentation programs, in particular the more costly ones (*ScalaMM300* or *MediaPoint*, for example), come with a whole range of ready-made backgrounds to use in your desktop presentation and video work. But you are not limited to using them with their parent programs, because being standard Amiga IFF images they can easily be imported into any suitable graphics or display software, meaning that you could process a Scala background with *ADPro*, for instance, and then use the result as a background for a *Deluxe Paint* graphic. So much easier than building your own, I reckon.

One other good point is that you may be able to save the presentation screen that you're editing as a plain IFF file, incorporating any text and brushes which you might have added, as well as its current background. Once saved as an IFF file, the image can be used in any other application which uses such graphics – or it can be converted to run with other software, even on other computer platforms. And if your presentation software can't save IFF images directly, use a screengrabber (as outlined above) to grab them instead.

THE FANCY 3D SPECIALS

If you own a 3D program like *Imagine*, *Real3D*, *Lightwave* or *Aladdin 4D* you can put them to good use rendering fancy backgrounds. Most of the current crop of programs allow for the production of graduated backgrounds, but where these programs really come into their own is when you start using their built-in or third party algorithmic (aka procedural – ie. mathematical) textures. By defining a simple rectangular plane and positioning the camera and lighting so as to fill the screen with a well-lit view of the object, some stunning backgrounds can be created quite easily. Marble, steam, metals, glass, and a wide range of other spectacular textures (especially if you are lucky enough to have Apex's Essence textures to use with an '020 version of *Imagine*) are just some of the background effects you can produce by this simple method. You can even use previously-made backgrounds as wraps for 3D objects, providing further scope for your creativity. And, of course, you can use any 3D rendered image as a background too. All that's necessary is that it is either rendered in a format and size required by your display application or that you scale and convert it with a suitable image processing or paint program.

WHERE TO GET IT

Alternative Image Textures 2 – £51.50
Alternative Image ☎ 0533 440041

Nexus Pro Backgrounds – £29.99 per set or £130 for all five full sets.
Videoworld Multimedia ☎ 041 641 1142.

Deluxe Paint IV – £90
Electronic Arts ☎ 0753 549442.

Art Department Professional – £149.95
Meridian Software Distribution ☎ 081 543 3500.



Graduated backgrounds are easily produced with most current 3D software – this from Real3Dv2.

There's also another type of 3D-program that background creators often use – and that's a landscape generator. If you have seen any of the latest Techno/Rave videos (including those produced by Dr Devious and Stud!o K7 in Berlin) then you'll have seen *Vista Pro* strutting its stuff as the provider of looped landscape backgrounds. Used either as stills, or as animations in their own right, such generated landscape backgrounds can be excellent when used carefully, though I must say that I'm getting thoroughly sick of seeing them used as an easy option to plop some boring, rotating chrome morph/sea urchin/spheroid shape in front of and calling it 'CyberArt', or such like. One further way of generating interesting backgrounds is to use a fractal program, such as a Mandelbrot generator (*Mand2000* and *Fractuality* to name but two) or another similar program like the shareware *Lyapunovia* program. With such software those 'psychedelic' images much favoured in the burgeoning Rave scene can be cranked out with very little effort – and even made into short animation files. Just thought you'd like to know, even though these programs shouldn't really be under this 3D heading.

OFF-THE-PEG – THE COMMERCIAL COLLECTIONS

If you have neither the time or inclination, nor access to paint or presentation programs (though how you'll use backgrounds if this is the case I've no idea) you might want to check out some of the commercial collections available or pick your way through the publically available images to be found at the other end of a modem connection (see below for more details on this). There have been commercial image collections available for some years now and some of the best I've seen include those from both Alternative Image and Videoworld MultiMedia's *Nexus Pro* backgrounds. Like the *Nexus* collections, Alternative Image's latest textures set provides a wide range of images drawn both from nature and from the world in general – including stones, woods, people, materials and so on. Image collections come in a range of formats; AI's new set of images (Volume 3), for example, are all in JPEG format, allowing over a hundred high quality pictures to be crammed on to twelve disks and be available to any Amiga owner with software capable of converting JPEG images to a format acceptable to the video, paint or presentation software being used to display the background itself.

HANDY HINTS

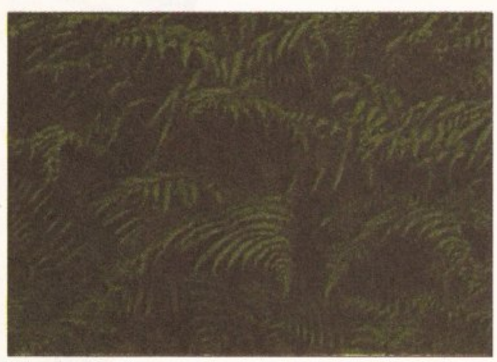
● When you are working with video, don't forget to make your backgrounds overscan so that they'll reach beyond the edges of the visible screen.

● Produce backgrounds which complement the text or foreground images they are going to be used with. Backgrounds are frequently used as 'eye candy' to provide additional, relevant text and graphics, but without swamping the more important foreground information.

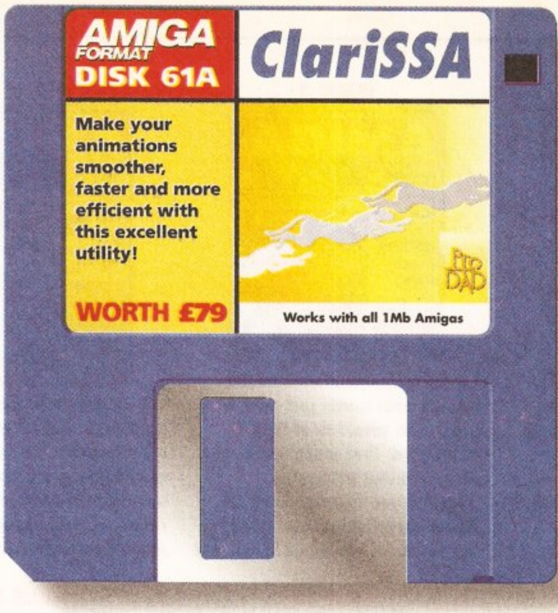
ON-THE-WIRE – THE INTERNET INSPIRATIONS

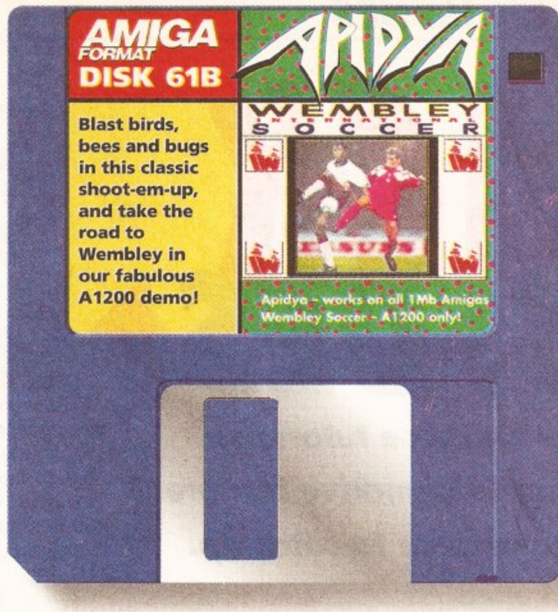
If your Amiga is wired to a modem, then a visit to a good BBS or a trip around the InterNet will often come up trumps as far as background images are concerned. A whole range of images are out there for the taking – from satellite images to classic works of art, glamour pix to aircraft, cars, landscapes, NASA photographs and much more. But you'll need to have a way of converting from the several different image formats commonly available at such sites before you can use them with your Amiga. GIF (Compuserve Graphic Interchange Format) 256-colour images are probably the most common, followed increasingly by JPEG (a high-quality 24-bit compressed format) and then a variety of PC formats such as TIFF, BMP and PCX. Image processing programs (including *ImageFX* and *ADPro*) and some better-quality paint programs can handle many of these formats, and owners of AmigaDOS3.0 Amigas can also utilise the various different datatype handlers to assist with displaying such images. There are also one or two PD image converters (*HAMLabPlus* and *WASP* are two that immediately spring to mind) which have image conversion facilities. Like any other third-party images which you may have access to you should check any ReadMe files which may be attached to any of the data which you have downloaded, as you may find that there are copyright restrictions which forbid the public use or distribution of particular images. So take care out there, and keep your background operations clean and up front.

Gary Whiteley can be e-mailed as drgaz@cix.compulink.co.uk AS



An image from Alternative Image's Textures 3 set, after being slightly processed with Art Department to change its appearance.





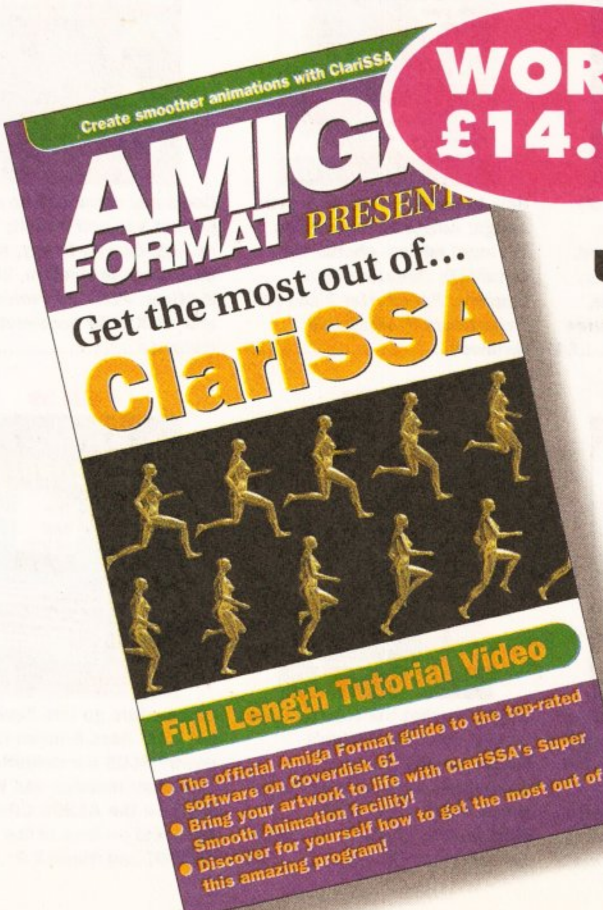
SUPER SLICK ANIMATIONS!

Say goodbye to jerky old IFF sequences! Say hello to a brave new world of super-smooth SSA motion! Things really move with ClariSSA's special effects

GO FOOTBALL CRAZY!

Get into the World Cup spirit with our exclusive playable demo of *Wembley International Soccer*. Then take on those wasps in the irresistibly playable *Apidya*

FREE VIDEO!



WORTH £14.99

NOT ONLY do you get the excellent *ClariSSA* animation utility (value: £69.95) on the Coverdisk, and a guide to how to use it. BUT there's a full 60-minute video created by the *Amiga Format* team showing you how to get the most out of *ClariSSA*. AND it's FREE!

BACK ISSUES

Missed out on those tutorials, reviews and informative features? Here's your chance to catch up.

ISSUE 2



2D Paint packages reviewed and rated; which programming language is the one for you; *PageStream 2*, *Scala*, *Broadcast Titler* and the KCS Powerboard PC emulator reviewed £3

ISSUE 3



Accelerator cards put head-to-head; the versions of BASIC compared; first installment of C programming tutorial; *PageStream* tutorial; *Bars & Pipes Professional* and AT-Once PC emulator reviewed...........£3

ISSUE 4



Ten of the most popular printers checked out; creating a structured drawing package with C; programming with Intuition; *Wordworth*, *Real3D*, *Imagine*, *Superbase 4*, T_EX and *Pro 24* reviewed £3

ISSUE 14



Hand scanners reviewed and rated; 15 memory expansions compared; incorporating sound effects and soundtracks into your animations; artificial intelligence; improve your Amiga programming £3

ISSUE 15



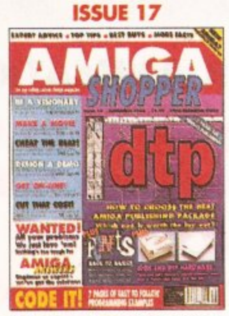
The best in PD software – how to set up a complete software system for nothing; the PostScript interpreter *Post*, *ImageMaster*, *SaxonScript Professional* DCTV and AVideo 24 reviewed £3

ISSUE 16



200 top tips – advice on everything from accelerators to Workbench, BASIC to WPs, C to video; getting the most from video titling; *Hit Kit*, *Professional Calc* and HAMA's 290 genlock reviewed £3

ISSUE 17



The top desktop publishing packages reviewed and rated; understanding typography; write adventure games with *Visionary*; tips on writing your own arcade game; Roland's new MIDI standard £3

ISSUE 18



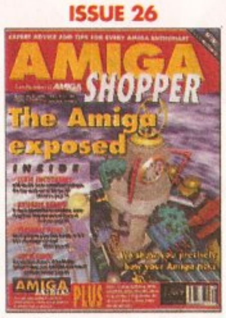
Amiga Answers special – 32 pages of solutions to problems on everything from AmigaDOS to video; using lighting to enhance your 3D graphics creations; typographical tips; *Maxiplan 4* reviewed £3

ISSUE 25



Nine top word processors reviewed and rated; legal advice with Amiga Advocate. Cover disk: *EdWord* text editor/WP, *AZSpell* spelling checker, CompuGraphic fonts and *Virus Checker*................£4

ISSUE 26



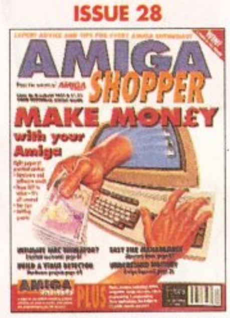
Find out how your Amiga works with The Amiga Exposed; get the best from your samples; fractal landscapes; VHS back-up system, *Personal Paint*, *TypeSmith* and *ADI Junior* reviewed £3

ISSUE 27



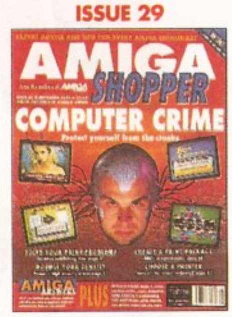
Upgrade your A500 to A1200 level; accelerator round-up; *Professional Page 4* reviewed. Cover disk: *OctaMED*, *XOper*, *Move* file mover, *JuliaMovie*, appointment scheduler, source code and *Virus Checker*. £4

ISSUE 28



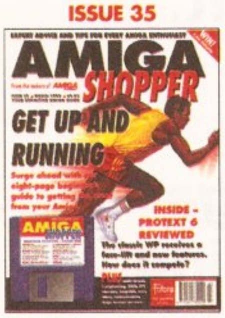
How to make money with your Amiga; Amiga animations on TV; legal advice; chords with *OctaMED*; *Directory Opus*, Emplant, *PageSetter 3* and *Art Department Professional* reviewed £3

ISSUE 29



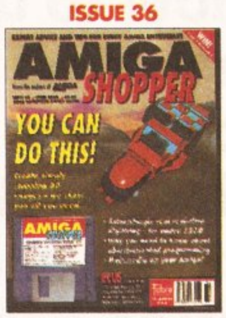
Computer crime and how to protect yourself from it; Power XL high-density floppy, Ami-Back back-up system, VLab YC digitiser, *Pixel 3D Professional* and MBX1230 accelerator reviewed £3

ISSUE 35



Special beginner's guide. *Noddy's Big Adventure* reviewed. Cover disk: *HDClick*, Compugraphic fonts, *King Con*, *Fast JPEG*, *Magic Menus*, *Trash Icon*, *Imagine* objects, C and AMOS source code £4

ISSUE 36



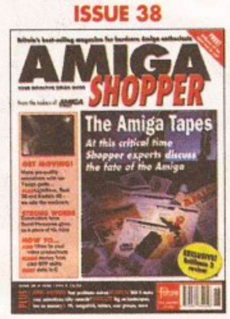
Render a superb-looking space ship with *Imagine*, *Real 3D* or *Caligari*. Cover disk: *X2C*, *Cover Ship*, *MIDI Player*, *BigAnim*, *LDOS*, C, AMOS and AmigaDOS source code, *BrushCon*, *Pay Advice*..........£4

ISSUE 37



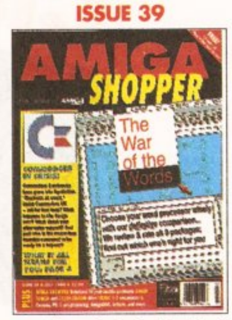
Explore multimedia with our guide to buying a CD drive and presentation software, with full listing of multimedia titles. Primera printer and *Wordworth 3* reviewed PLUS how to create flying logos and hand scan ...£3

ISSUE 38



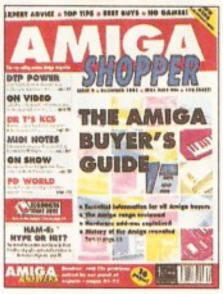
Discover what the experts have to say about the Amiga's future; create stunning animations with our eight page guide. PLUS reviews of *Brilliance 2*, *Clarissa*, *Montage 24* and *Vista Lite* £3

ISSUE 39



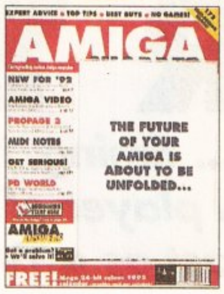
Commodore go into liquidation, but what does it mean to the users? PLUS our definitive word processor roundup and WP tips, news on the *A1200 CD-ROM drive* and reviews of the *A4000T* and *MusicX 2* £3

ISSUE 8



A complete guide to buying Amigas and related hardware; Prolog programming; the HAM-E graphics system, RocGen genlock, KCS sequencer reviews PLUS tips on DTP, MIDI and spreadsheets £3

ISSUE 9



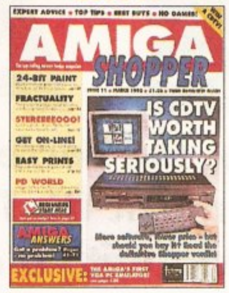
The complete Amiga software guide; how to receive satellite and radio transmissions; designing Christmas cards with *Professional Page*; using MIDI sequencers; reviews of *Scala* and the A500 Plus...............£3

ISSUE 10



How best to draw with *Deluxe Paint*; the guide to the best sound samplers available; budget business packages; ARexx; *GB Route Plus 2*, *Showmaker* and Rendale Super 8802 reviewed £3

ISSUE 11



CDTV and its software get a good going over; how to perfect your printing; Harlequin graphics board, Stereo Master sampler, *Genesis* and KCS Power Board PC emulator reviewed £3

ISSUE 13



FREE Tracey covermount and how to use it in our animation special; the unforgettable guide to Amiga memory; PC CDs with the A570; Miracle Piano Teaching System and RocTec hard drive reviewed £3

ISSUE 20



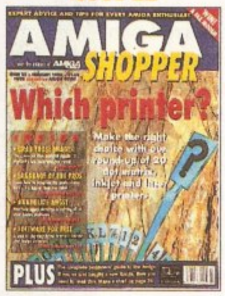
Step-by-step guide to ray-tracing; accelerator board round-up; multitasking tutorial; build a ROM switcher; fractals tutorial; artificial intelligence; ***AMOS Professional*** and Opalvision reviewed............ £3

ISSUE 21



Amiga Shopper Awards for the best buys in '92. Cover disk: CG fonts, *DirWork*, screen blanker, *ICalc*, *LhA*, *PowerSnap 2*, *RDES*, *ReOrg*, *Safe Delete*, *SPClock*, *SysInfo* and *Virus Checker*.............................£4

ISSUE 22



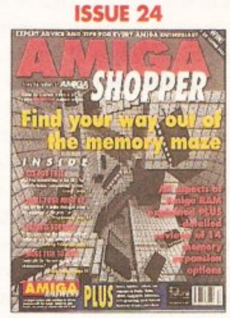
20 printers – dot matrix, inkjet and laser – reviewed and rated; beginner's guide to the Amiga; spreadsheet tutorial; guide to AmigaDOS 3; code clinic; sample storage techniques; hand scanners compared......£3

ISSUE 23



How to fit a hard drive to an A600 or A1200; starting with assembler; Cover disk: *Alert*, *Cycle To Menu*, *Kwikbackup*, *LhA*, *ReqTools*, *SnoopDOS*, *Virus Checker*, assembler and linker package £4

ISSUE 24



RAM – what it is and what to buy in our in-depth round-up and tutorial; DIY hardware repairs; parallax scrolling with AMOS; eliminating MIDI faults; *Art Expression* and G-Lock genlock reviewed £3

ISSUE 30



Video on the cheap – the techniques and low-cost software you need; how to use fonts; *Proper Grammar*, TechnoSound Turbo 2, *AMOS Pro Compiler* and *Powerbase* reviewed £3

ISSUE 31



Amiga Answers special – 26 pages of advice; Compugraphic fonts. Cover disk: debugging utilities, *Flexer*, *EasyCalc*, *PayAdvice*, *ASPaint* source code, *Address Book* source code, *Virus Checker 6.30* £4

ISSUE 32



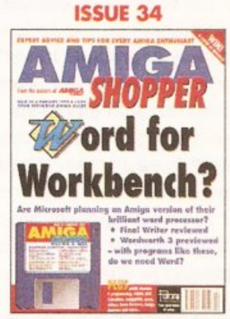
Scanners special – reviews of colour scanners and their software; *Brilliance* reviewed. Cover disk: ACC Hardware Programming Guide, *MapStation*, Listings, *Alarm*, *ASPaint* and *QuickTools*........£4

ISSUE 33



Reviews special – over 50 products rated. Cover disk: *DICE C* compiler, *Address Book* C source, Nexus video backgrounds, *ASPaint* AMOS source PLUS free *Complete Amiga C* booklet..................£4

ISSUE 34



Will there ever be *Word* for Workbench? *Final Writer* reviewed and *Wordworth 3* pre-viewed. Cover disk: *ReSource* Demo, *Rend24*, *ToolsDaemon*, C and AMOS source code, *Ami-Cipher*, *Ambush*, *GUI-Guru*.....£4

BACK ISSUES ORDER FORM AS40

Please tick the issues you require:
Prices listed are per copy and include postage and packing. Issue numbers not listed are sold out.
*Asterisk denotes issues with cover disk included. They are £4 each if bought separately.

SAVE MONEY: BUY IN BULK
Any two issues – £5
Any three issues – £7
Any five issues – £10

❑ BINDER £4.95

SEND THIS FORM (no stamp required) TO: *Amiga Shopper*, Future Publishing Ltd, FREEPOST (BS4900), Somerton, Somerset, TA11 6BR.
Do not send cash through the post with your mail orders.
Please make all cheques payable to Future Publishing Limited.

❑ 2 ❑ 3 ❑ 4 ❑ 8 ❑ 9 ❑ 10 ❑ 11
❑ 13 ❑ 14 ❑ 15 ❑ 16 ❑ 17 ❑ 18 ❑ 20
❑ 21* ❑ 22 ❑ 23* ❑ 24 ❑ 25* ❑ 26 ❑ 27*
❑ 28 ❑ 29 ❑ 30 ❑ 31* ❑ 32* ❑ 33* ❑ 34*
❑ 35* ❑ 36* ❑ 37 ❑ 38 ❑ 39

Total payable: £❑❑.❑❑

Name ....
Address ....
....
....
Post code ....
Telephone No ....
Method of payment (please circle) Access • Visa • Cheque • PO •
Credit Card No. .... Expiry Date ....
Signature ....

TIME AFTER TIME

Just like comedy, the secret of good music is... timing. If anybody knows about timing in music it's Tim Tucker, ex-bass player of noted beat comb "Cactus Rain" and with a dark and shady past as a TV theme composer

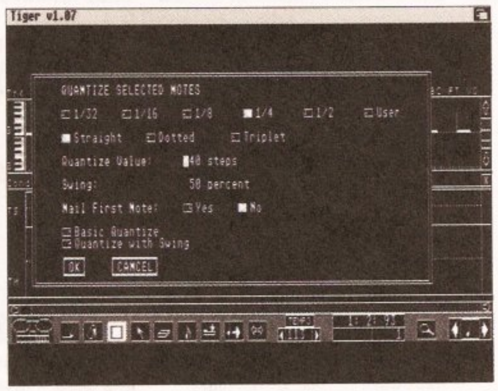
Whatever type of music you're creating, it's more than just a cliche to say that timing is important. With everything from classical sonata, to swing jazz, to funk and hip hop, it's essential to get everything sitting right in the pocket. This is not meant to imply that there is a wrong or right way to approach timing in any style of music. In fact, timing is such a subtle art that there are hundreds of different ways of "getting it right" so to speak, and most of it is down to personal taste. One man's groove may be another man's stiff run-through and, like all music, it's down to you to make the final decision as to whether it's working or not. There are often a number of alternatives which work equally well, and part of the problem when working with computers is deciding what to discard and what to go with.

Although there are no text book answers to creating grooves, it is possible to work on some useful techniques for improvin' your groovin'. This article will be concentrating on those techniques, and hopefully will provide a springboard to inspire you to produce a better feel from your sequencer. All of the techniques discussed are possible with any sequencer on the Amiga, although it may be more easy to produce the effects on some pieces of software than others. Every sequencer is programmed with emphasis on different aspects of music making, and the provisions for timing are different in each case. Despite this, there is always a way to produce the right results, even on the most limited sequencer around, it just means that you'll have to spend a little more time creating the effects you're after.

QUANTISATION – THE BIG Q

As soon as you mention timing with regard to sequencers, you inevitably come round to considering the quantise options. If you're completely new to sequencing, quantising may not be a familiar term. It's an aspect of music making which has only been introduced with the advent of computers, and has no connection to any techniques used in the "real" world of music without sequencers. If it is an unfamiliar term, or needs clarifying in any way, read the separate box titled "Quantisation" for a definition.

Quantisation is a two edged sword that is responsible for much that is both good and bad in sequenced music. For the inexperienced or lazy it can be used far too much, and wipe out any feel that the music might have had from the minute you record it. Many others are wary of it for that very reason, and miss out on all the useful and time saving techniques it provides for musicians of all abilities.



In KCS's Tiger you can alter the Swing value by percentage to gain some extra added groove.

The amount of quantisation you use, and how you actually use it, is largely down to how you feel about it as a recording technique, and what type of music you're creating. For starters, it's important to drop all your preconceptions, and take a fresh look at what it can offer. The most obvious use for quantisation, and indeed the reason why it's present on every sequencer you care to mention, is for tidying up messily played parts. Play the part half heartedly, quantise it to sixteenth notes (semi-quavers) and you've got a perfectly played, strictly in time musical recording. The problem here is that music in strict time so often fails to provide that elusive "groove".

A good place to start is to get away from quantising every single note that you've recorded. Turn off the 'quantise on input' option if your sequencer has one, and play your part as nature intended it. Don't be afraid to carry on if you make any mistakes, as you may find that those very mistakes will yield some good stuff later on. Once you've recorded it, play it through a few times. Listen carefully to see if there are any parts of your recording which work particularly well. It may well be that the second two bars of a four bar section are fine, while the rest needs work. Loop the sections that sound best, and try to get a feel for why it's working. Many sequencers enable you to do this in the editing pages by marking the section and playing it, but if not, simply cut the required bars and paste them into their own track.

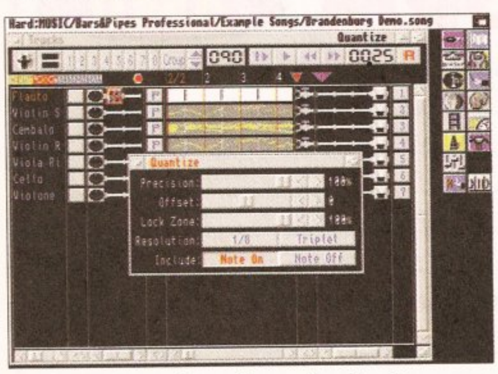
Once you've found the bits that work, you can start looking at the other data in the track. Select the notes that need quantising and apply the relevant quantise values to them (most sequencers enable you to select the specific notes of the sequence you want to quantise). The result is a track which combines the groove of your original playing in some bars, with the strictly quantised sections correcting the stuff that's really out.

THERE'S MORE THAN ONE WAY TO QUANTISE

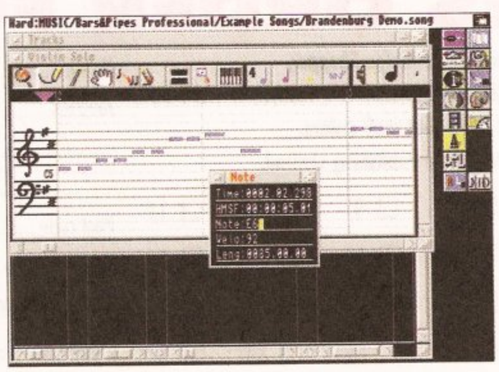
Get into using the different types of quantise options that are provided by many sequencers. All of the big three sequencers on the Amiga (Dr T's *KCS*, *Music-X 2*, and *Bars and Pipes Professional*) provide a number of options in their quantise windows, which you can often be unaware of because it's far easier to go with the defaults and get the music down. Take a look at them, and spend some time experimenting with the different quantise features to note their effects on your newly recorded music.

One of the most common is the Duration function. This enables you to quantise not just the start of a note, but also its length in time. This may not seem a very useful option, but it can provide amazing results. Take for example a walking bass line in a jazz tune. Most jazz bassists create a better feel by using the length of their notes to fill the gaps between the beats, providing a consistent 'thrum' that really adds to the swing. To achieve this feel, set the Duration quantise to a quarter note, or crotchet. This feature can help with other sorts of music too. For example, pizzicato strings in an orchestral section often benefit from a strictly clipped staccato feel, which can be achieved by quantising durations to sixteenth notes or even shorter.

Offsetting notes is a very effective way of making a groove out of an otherwise clinical part. *Music-X 2* and *Bars and Pipes* enable you to set an Offset value when quantising, and KCS provides an altogether more flexible Time Shift option which can be applied in real time while the track is playing back. The offset is defined in terms of clock beats, and the result is a fully quantised part which is



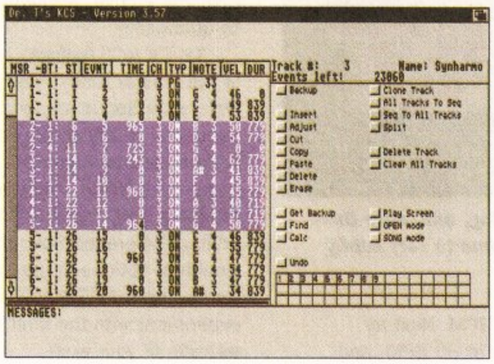
Bars and Pipes will enable you to alter the precision and lock zone of the quantise, as well as note off for durations.



There are some truly great editing tools in Bars and Pipes, including the option to alter every single individual note's timing.

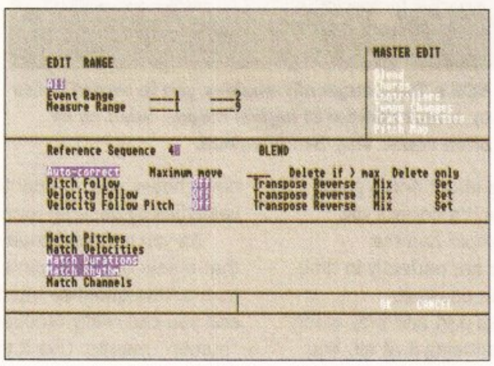
then shifted in its entirety by the amount you specify. All the notes are strictly in time with each other, but they are all slightly off the main beat, by the specified amount.

A good way to hear this effect is in a drum track. Record the bass drum and quantise it strictly in time, four to the floor. Now record the snare drum, and apply quantise, but this time with an offset value of a couple of clock beats or so. If you make the offset a minus number, each snare hit will occur slightly before the beat, which gives the snare an aggressive and slightly rushed feel, as if the drummer is anxious to get on. Shift the same part to a plus number, and the snares are hit late, which provides an altogether more laid back feel, as if the drummer is being slightly more relaxed and chilled out. Vary the amount of offset until you reach a feel that works for you; you'll be surprised at how much this technique can affect the feel of a song. A lot of American producers use both techniques during different sections of songs – for example, the late (positive) offset in the verse to create a relaxed feel, with the more 'up' (negative) offset in the chorus to bring the song to life.



Use the event editor in KCS to select the group of notes which most need their timings quantised.

If you don't have a Quantise Offset command in your sequencer, or you want to experiment more with offset values in real time, you can achieve the same results in your editing screen. First of all, make sure that you've recorded all your drum parts with standard, boring, full quantisation. Next select all notes of a particular sound, for example all the hi-hats. This is usually easy to do in a graphic editing environment, because the same sounds always use the same pitched notes to trigger them, so you can use "rubber band" selecting to stretch across all the hi-hat hits horizontally, for instance. Alternatively, if you have a logical select function in your editor, such as *Music X 2*, or *KCS's Tiger*, you can use that to automatically select all notes of a certain pitch, which equates to the same thing in a drum part. Next use the cursor keys to prod all the selected notes forward or backwards in time, and listen to each change as you do it. Again, listen for the change in feel.



The Master Editor in KCS provides some handy ways of matching rhythms to reference sequences that feel right already.

LEAVE IT ALONE

Both *Music X* and *Bars and Pipes* offer great ways of making sure that the feel isn't completely removed from your quantised track. They do this by enabling you to select which type of notes are to be quantised in the first place. In *Music X*, there is a control marked "Minimum Threshold", the value of which you can adjust with a slider. This enables you to quantise only notes which are a certain distance away from the beat, retaining the closer notes (either before or after the beat), which would be less noticeably out of time. For example, if you specify 4 clock beats in the Minimum Threshold setting, quantising will only affect the notes further than 4 clock beats either side of any beat – the ones that remain are presumed to sound more like a "feel thing" than a mistake. If you have *Music X*, try experimenting with this option to see which settings work the best.

Music X also features an Effect % control, with which you can determine how far you want to quantise your recorded music. 100% will move the notes to the exact beat, whereas a setting of 50% will move a note that was recorded 6 clock beats away, to a time value 3 clock beats away. You can get a very similar effect in *Bars and Pipes* by using the Precision and Lock Zone sliders to determine which notes are moved, and by how much.

Don't forget also that some instruments sound especially unrealistic when quantised. Chordal string instruments, like guitars, mandolins and lutes, sound particularly odd, as a chord is often "strummed" on these instruments. The best way to emulate this strumming is to stagger the notes of the chord by a very small amount when you record the part. Place your hands on the notes of the chord on the keyboard, and play each note in turn very quickly, starting at the bottom note and ending at the top. Slow the sequencer down if you're having trouble playing like this. What you should hear is a sound similar to a plectrum strumming across the strings of a guitar, for instance. If you were to quantise this, you would lose the strumming effect, but many sequencers allow you to select the entire chord and move the whole lot backwards or forwards so that the first note lands on the beat. This simple way, the chord is in time with your music, but the notes still retain the very small timing differences that created the strumming effect.

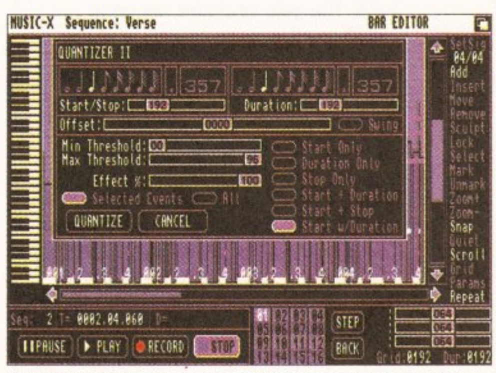
IT DON'T MEAN A THING...

You'll often hear the word "swing" applied to the rhythm of a piece of music, and there are many cases where a good swing can lift a piece out of its dull routine. What it means generally is a slight loping of the beat, created by altering the individual lengths of notes that would normally be evenly spaced. The best way to tell the difference between a standard rhythm and a swung one is to record a hi-hat part, with two hits to every beat (eighth notes) and quantise it so it's perfectly in time. Now select every other note, starting with the second, so you should have notes 2, 4, 6, 8, 10 etc all selected, and move them forward in time by quite a few clock beats (you'll have to move them all individually if you can't multi-select in your sequencer, but make sure that you move them all by the same amount). Instead of being all even, they now have that loping swing – long, short, long, short. The more you push them forward, the more of a swing feel you gain. For example, if the straight even notes are 96 clock beats apart, try making the long one 128 clock beats long and the short one 64 clock beats long. This is actually a strictly quantised 12/8 rhythm, which is often what

WHAT IS QUANTISATION?

To understand quantisation, you first have to understand how a computer records MIDI data. When you press play on a sequencer, a series of timing pulses are produced by the software to keep the computer running in time. The pulses are logically split into beats, which is how music is actually played, and the number of pulses used for each beat is determined by the sequencer's resolution. Dr T's *KCS* and *Music X* both run at resolutions of 192 PPQ (which stands for Pulses Per Quarternote), which is a good average value – imagine trying to tap out 192 equal beats in the space of one normal beat! When you record music, your notes are placed onto the nearest timing pulses, so a higher resolution produces a more natural result.

Quantisation forces the notes you play to only be stored as multiples of the timing clocks. For example, if you quantise to 96 clock beats, then notes you record will only be stored with time values of 96, 192, 288, and so on. Most often, the values are expressed as musical values, such as quarter notes, which would be 192 clocks, or eighth notes, which would be 96 clocks. Imagine a quantise setting as a grid, and depending on which setting you choose, the notes are placed on the nearest point on the grid. With more powerful sequencers, like *Music X* and Dr T's *KCS*, you can choose the actual clock value as a quantise option, making the whole thing user definable. This is especially useful if you want to quantise notes to odd time values, such as septuplets (7 equal notes) or quintuplets (5 equal notes).

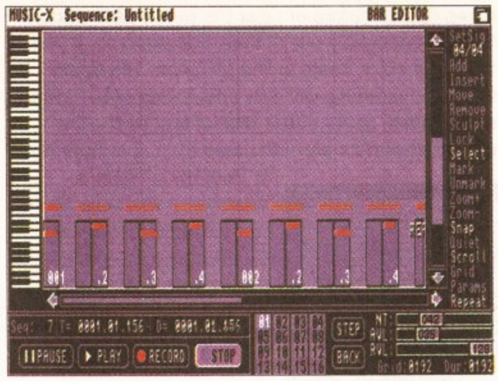


Music X 2 has a very comprehensive Quantiser module which enables you to create many great timing effects.

a true swing feel is doing, but less strict rhythms like 120 long, 72 short can create a much more natural feel.

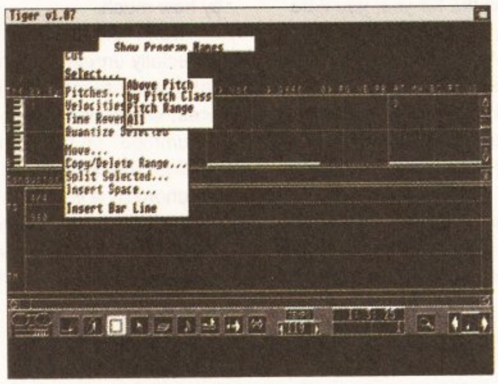
Music X 2 has a special Swing Processor which can aid enormously in getting instant swing into your music, by enabling you to select the notes of a beat that you want to alter from a grid, and changing them all in the same way – for example, taking every other note and pushing it forward in time. Try using it to spice up dull rhythms.

Of course, a major alternative to mucking around with quantise options and losing the feel of your song is to not quantise anything at all. Experienced and more proficient keyboard players will no doubt be taking this approach anyway, but you shouldn't count it out even if your playing is a little rusty. Never be afraid to slow down a track to a comfortable tempo to get difficult, or even easy, parts down. It may not sound particularly "tight" at the slow tempo, but picking up the speed to the required BPM will make all the difference. Try recording a drum part at 120 BPM. Next try recording the same drum part at 80 BPM, and when you've finished the recording, take the tempo back up to 120. See? It sounds a lot more in time, and you haven't had to resort to quantising at all.



Select notes by rubber banding, and move them backwards and forwards in time to very subtly alter the feel of a rhythm.

Another good trick for creating a feel is to use somebody else's groove. This is easily done if your sequencer can play Amiga samples (most do). Record a sample of a drum loop, either from a record or from one of the hundreds of sample CDs available, or even from one of your mates playing onto tape. Obviously a real drummer has the advantage of keeping good time while creating his own groove (if he's any good). Once you've got the drum sample (say two bars), loop it in your sequencer and adjust the tempo of the sequencer to match that of the drum loop. This is a fairly lengthy process, which requires a lot of fiddling about and a great deal of careful listening. When it's correct you should find that your drum sample and the metronome in your sequencer are perfectly in time with each other, or as close as possible.



KCS's Tiger magically enables you to select notes by a vast number of logical means, such as by pitch class. Very handy indeed.

Now you can record a bass part and play along with the sample – without quantising it at all. You could even record separate bass, snare and hi-hats and try to match the groove of the sample. When you've got the parts working together well, mute the sample and listen to what you've recorded in the sequencer. You'll find that playing along with a real (albeit sampled) musician in this way is a great way to get into the feel of what you're playing and produce really groovesome parts. You might even want to lose the original sample altogether at the end of it all.

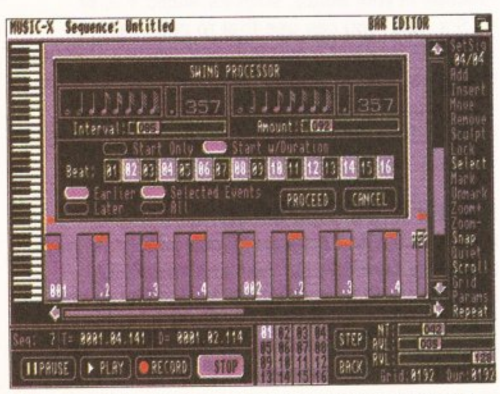
Once you've succeeded in getting the feel right of a certain part, without or without quantise, you have to ensure that the other instruments work well with it. If it's a good groove you've created, it should be a simple matter of playing along, getting into the feel, just as you would in a band, but there are certain techniques which you can use to ensure that your parts are in time together. For example, say you've recorded a bass drum part that's not been quantised but has a really good groove. Copy the notes of the track, and paste them to a track of their own. Now, change the MIDI channel of the new copied track to the MIDI channel that your bass sound is set to. Obviously, you're unlikely to want a bass line which plays on only one note, but you can edit the pitch of each note, while leaving its placement in time intact, and even add notes between the copied notes. This ensures that the key bass notes play absolutely perfectly in time with the bass drum, and that the whole thing forges a similar groove, without the strict timing imposed by quantising.

Dr T's *KCS* features a wonderfully useful option in the Master Editor. Using this you can define a Reference Sequence, and then Auto-Correct the sequence you're editing to the Reference. This makes the whole process of matching two sequences which aren't quantised together, retaining a tightness and the essential feel of the original Reference Sequence. There is also a wealth of options in the Programmable Variations Generator of *KCS* which can be used to really experiment with the timing, and many, many other aspects of your work.

VELOCITISE FOR TRULY 'HUMAN' RESULTS

Of course, the feel of a track is not only dependant on its timing, and one of the ways you can enhance a rhythm is to accent different notes of a track. The best way to do this is to work on the velocities of individual notes. Try taking a hi-hat pattern, evening out all the velocities to about 64, and then increasing some of the notes in the pattern to 128. This brings out the accented notes, and really puts some humanity back into an otherwise dull, relentless part. If you're doing it with pitched instruments, make sure that you accent the more important notes, such as down beats and chordal tones, and reduce the velocities of passing tones and chromatic notes.

As you can see, there are many ways to ensure that a sequencer doesn't produce robotic sounding music. Use quantise intelligently and sensitively and you can really produce some wonderfully "human" results. Use it too much and you can lose all the soul of the music you're creating. It's worth saying again that your ears are the best judge, so make sure you take time out to listen to the results carefully. Aim for a piece of music that doesn't sound like it's being produced on a computer, and you should be heading in the right direction. AS



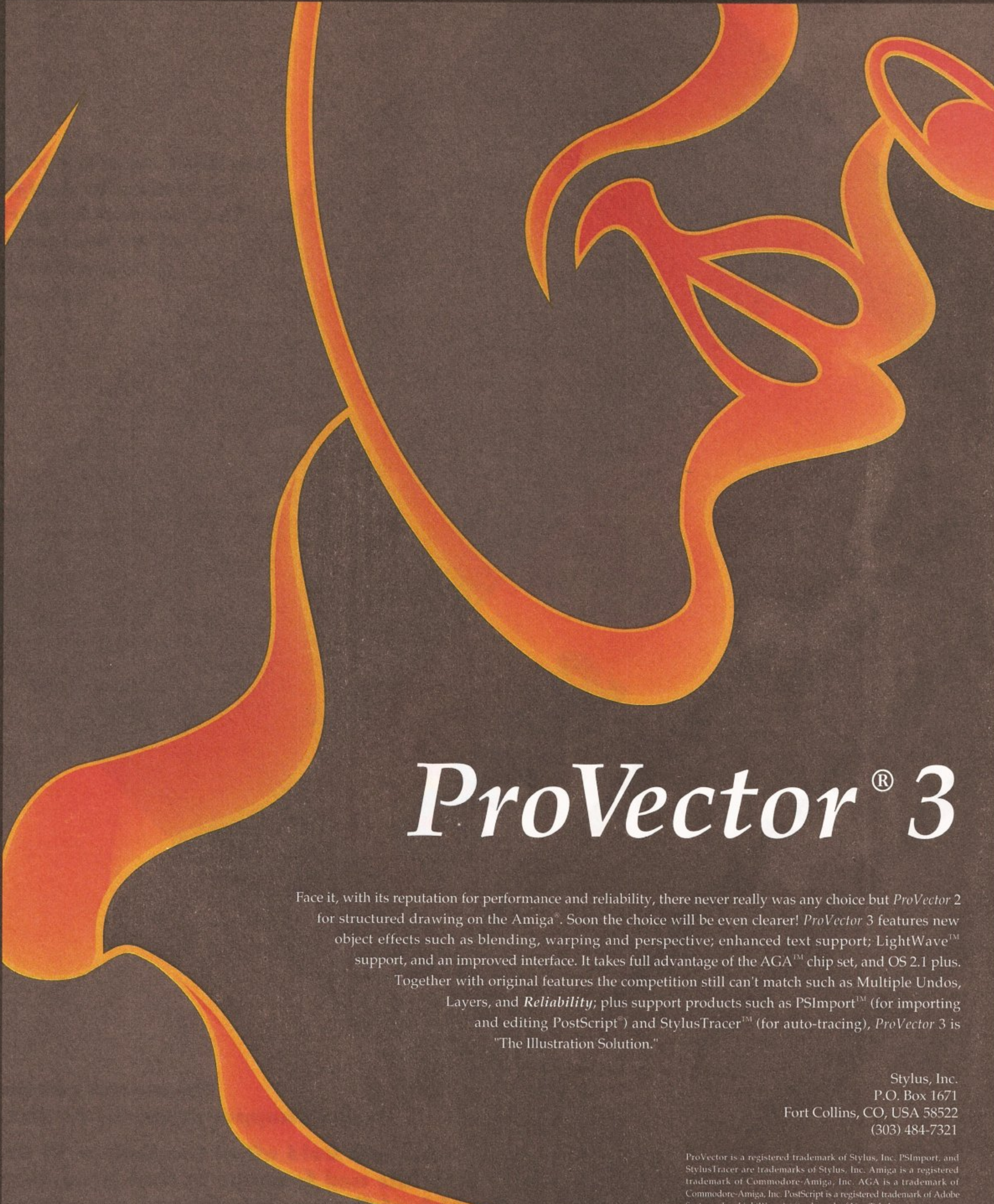
The special swing processor can aid enormously in getting instant swing into your music. You could try using it to spice up dull rhythms.

EFFECTS THROUGH QUANTISE

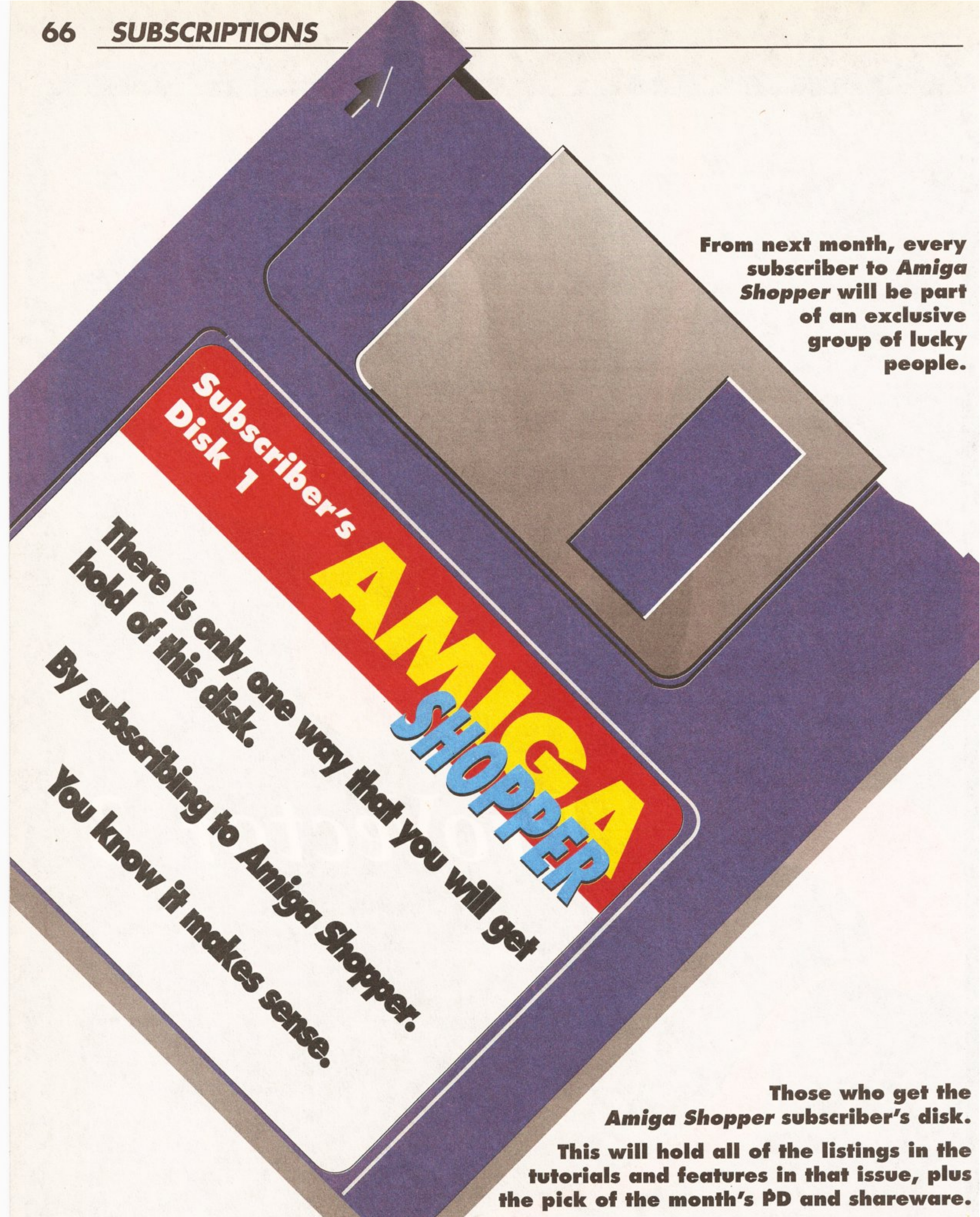
Most people think of quantising as just being applicable to note information, and indeed that is where it is most commonly used. But have you ever considered applying quantise to other types of MIDI data? Pitch bend is a good example. Under most circumstances, you wouldn't want to quantise standard pitch bend messages, as you want to retain the smooth pitch changes that a pitch bend produces. However, you can create some very interesting effects by quantising the pitch bend messages in a synth or brass part. The smooth, swooping bends that this creates can really enhance a dance track for example. Just listen to the Prodigy's *Charlie* for a good example of this technique.

Try it with other types of MIDI message to see what the results are. Modulation wheels can create some very interesting sounds when you apply them to a synth sound and quantise the recording. Even quantised aftertouch messages can liven up a track. If you have an outboard noise gate that responds to MIDI messages, record some strictly quantised sixteenth notes and route them to the gate. The gate could be set up to effect a string or synth pad, and the result is a stuttering which goes perfectly in time to your beat. The Shamen's *Move Any Mountain* makes good use of this effect.

A bizarre little trick that you can try to enhance a funky track is to emulate a wah-wah effect. Simply set your synth up to produce an organ sound, and run your hand up and down the keyboard while recording your performance to the sequencer. Now quantise the whole track to sixteenth notes, and the result is a fantastic wah-wah emulation. Shaft, here we come.



ProVector® 3
Face it, with its reputation for performance and reliability, there never really was any choice but ProVector 2 for structured drawing on the Amiga®. Soon the choice will be even clearer! ProVector 3 features new object effects such as blending, warping and perspective; enhanced text support; LightWave™ support, and an improved interface. It takes full advantage of the AGA™ chip set, and OS 2.1 plus. Together with original features the competition still can't match such as Multiple Undos, Layers, and Reliability; plus support products such as PSImport™ (for importing and editing PostScript®) and StylusTracer™ (for auto-tracing), ProVector 3 is "The Illustration Solution."
Stylus, Inc.
P.O. Box 1671
Fort Collins, CO, USA 58522
(303) 484-7321
ProVector is a registered trademark of Stylus, Inc. PSImport, and StylusTracer are trademarks of Stylus, Inc. Amiga is a registered trademark of Commodore-Amiga, Inc. AGA is a trademark of Commodore-Amiga, Inc. PostScript is a registered trademark of Adobe Systems, Inc. LightWave is a trademark of NewTek, Inc.



From next month, every subscriber to *Amiga Shopper* will be part of an exclusive group of lucky people.

Those who get the *Amiga Shopper* subscriber's disk.

This will hold all of the listings in the tutorials and features in that issue, plus the pick of the month's PD and shareware.

Plus the odd surprise...

Don't be left behind. Subscribe!

Subscribe and save yourself £££s

- **You get a whopping 14 issues for the price of 12 – just £30 in the UK**
- **You pay no extra for higher-priced issues with special covermounts**
- **Pay by direct debit and save a further £3**
- **Get an *Amiga Shopper* binder, worth £4.95, for absolutely nothing.**

You'll also be guaranteed your fix of hardcore Amiga info every month, delivered direct to your door – no more waiting in line at the newsagents PLUS each month you'll receive a special subscriber's letter, straight from the editor's desk.



SUBSCRIBE NOW

RING THE HOTLINE ON 0225 822511

Please cut out and send to *Amiga Shopper* subscriptions, Future Publishing, FREEPOST, Somerton, Somerset TA11 6BR. *(No stamp required.)*

Yes! I would like to subscribe to *Amiga Shopper* for 14 issues and receive my free binder (worth £4.95).

(Please tick one box only)

- ☐ UK direct debit £27 *(Complete the form below)*
- ☐ UK subscription £30
- ☐ European Community subscription £40
- ☐ Rest of World subscription £57

SUBSCRIBE USING THE DIRECT DEBIT FORM BELOW AND SAVE £3

Please debit my Visa/Mastercard with £ .... or

I enclose a cheque payable to Future Publishing for £ ....

(cheque must be in Sterling drawn on a UK bank account)

Signed .... Date ....

Card No. ....

Expiry date ....

Name ....

Address ....

....

....

.... Postcode ....

Offer expires 15th August 1994 AS/SC/8/94

DIRECT DEBIT INSTRUCTIONS Originator's ID: 930763

This card instructs your bank or building society to make payments direct from your account. Please complete both the form above, and all five items on this form, which we will forward to your bank. The amount, as shown above, will be taken from your bank account at the start of your subscription.

(Banks and building societies may refuse to accept instructions to pay direct debits from some types of accounts.)

1. Please write the full address of your branch

To: The Manager

....Bank/Building Soc.

....

....

....

....

2. Account no ☐☐☐☐☐☐☐☐

3. Sort code ☐☐ ☐☐ ☐☐

4. Account in the name of:

....

Instructions to bank/building society

– I instruct you to pay direct debits from my account at the request of Future Publishing Ltd.

– The amounts are variable and may be debited on various dates. I understand that Future Publishing Ltd may change the amounts and dates only after giving me prior notice.

– I will inform you in writing if I wish to cancel this instruction.

– I understand that if any direct debit is paid which breaks the terms of this instruction, you will make a refund.

5. Signed.................................**Date** ....

Environmentalism



Mark Smiddy explains how to use environmental variables and presents a protected Shell for beginners.

Environmental variables are one of the most misunderstood parts of AmigaDOS, yet in many respects they are really very simple. A variable is a labelled "container" for information. The label is otherwise known as the variable's name and the container is the variable itself. The term "variable" simply means the contents of the container are not defined in advance and are subject to change under program control.

In many programming languages variables are defined by the type of data they contain: integers, floating point numbers, text and so on. AmigaDOS and the complementary language, ARexx, are "typeless" which means a variable can contain any information. The environmental part is a historical name referring to a set of reserved variables used by DOS languages. AmigaDOS has a few of these and we'll come to them shortly.

Broadly speaking, AmigaDOS has two flavours of environmental variable: local and global. User local variables are only available from AmigaDOS 2 and higher and the global cousins from release 1.3. The following points summarise the major differences:

- Local variables are only available within the Shell that defined them or any Shells launched from it. The variable is discarded when all those Shells are closed.
- Global variables are stored in the ENV: assignment (in the RAM disk) and are available to all Shells. Global variables can be modified by file operations. Local variables can be set or read by AmigaDOS commands; they cannot be written to directly.
- There is no limit to the length of a global variable (except available RAM). Local variables are limited to a single line in length.
- Local variables take priority over global variables in calculations when two variables of the same name exist.

BASIC OPERATIONS

AmigaDOS only has three true local environmental variables, and you can only get access to them from AmigaDOS 2. They were present in earlier revisions but only available to programmers working at operating system level (and even then, only with difficulty). The following command works in AmigaDOS 2:

```
1>SET
Process     1
RC          0
Result2     0
```

These three variables are available from any Shell:

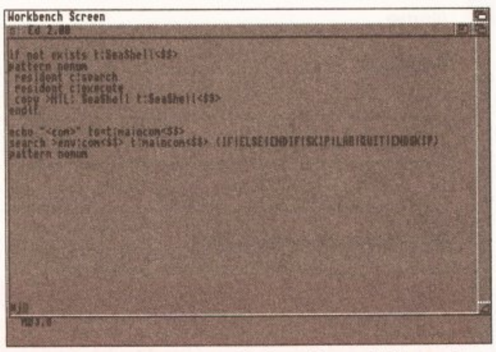
RC – the primary result code (from the last command). 0=OK; 5=WARN; 10=ERROR; 20=FAIL.

Result2 – the secondary result code. This value is only valid if a command returns a primary result code of 10 or higher. The value is used by the WHY command to get a short description of why a command fails.

Process – the current Shell process number. Under AmigaDOS 1.3 it was only possible to have 20 AmigaDOS processes running concurrently; the restriction was lifted in Release 2.

To see how this works, you can introduce an error like this:

```
1>ECHO "
argument line invalid or too long
1>SET
process     1
RC          10
Result2     120
1>why
Last command did not set a return code
```



ED has a tendency to split long lines. We're using the join command here to splice the two lines together as they should be. The command (ESC-J) can be seen at the bottom of the window.

Using the AmigaDOS 1.3 compatible command, WHY to get the same information doesn't work here. Why? The answer is that SET is a valid command and re-sets the values in RC and Result2 itself. By the same token, you can't set RC or Result2 because the command re-sets them on exit. For example:

```
1>SET RC 10
1>SET
process     1
RC          0
Result2     0
```

For the sake of curiosity, you can set "Process" but this has no affect on the system. The command GET can be used to retrieve the value of any named variable like this:

```
1>GET RC
0
```

There's much more to variables than this of course. When AmigaDOS 2 scans a command line it performs some pre-parsing before attempting to execute the command. The first scan expands the contents of any variables marked by a dollar token. There are a few considerations to watch out for here, but for the moment here's a simple example of how it works:

```
1>SET FirstName Mark
1>SET LastName Smiddy
1>ECHO "Hello $FirstName $LastName"
Hello Mark Smiddy
```

Remember, the variables are expanded *before* the line is interpreted, so you don't have to worry about quotes. (ANSII codes {*e[xx} are read by ECHO so the quotes must be included in these cases.) Therefore, the following is also valid:

```
1>ECHO Hello $FirstName $LastName
Hello Mark Smiddy
```

It's most probably worth mentioning at this point something that very often trips beginners. Try this:

```
1>SET NAME Mark Smiddy
1>ECHO Hello $NAME
Hello
```

What happened to NAME? It's a feature of AmigaDOS – NAME is acting as a keyword, so this

SEASHELL: SMIDDY'S EASY ACCESS SHELL

SeaShell (Smiddy's Easy Access Shell) is a protected Shell environment that's easy to use and traps over 30 of the most common errors. SeaShell mimics all the normal Shell operations and with a few exceptions, it can be used just like any normal AmigaDOS Shell. Limited protection is offered for DELETE – so you don't accidentally delete lots of files. For speed and simplicity it only works with AmigaDOS versions from 2.0 onwards; the limitations of earlier versions make it impractical.

The following exceptions should be noted:

- SeaShell cannot interpret quotes. Any quotes you include on the command line are absorbed by AmigaDOS and there is no way around this. This affects the LFORMAT option in commands such as EVAL and LIST rendering them useless. ECHO is not greatly affected since the quotes are not required for most uses. This does prevent the use of ANSII codes.
- Some serious errors (and some minor ones) will halt SeaShell. This only happens when you use some of the more advanced features, or attempt something AmigaDOS cannot cope with. Command insertion using command, for example, will halt SeaShell if the command is not found.
- You cannot change the prompt – this is hard-coded in SeaShell. (You can always change the program at a later date, however.)
- The End-of-file (EOF) control sequence CTRL+\ has no effect on SeaShell. It must be terminated by ENDSHELL or ENDCLI.
- Local environmental variables, "RC" and "Result2" are read internally by SeaShell and cannot by returned directly by SET.

These might seem like serious limitations, but SeaShell is perfectly adequate for everyday use while you get to know the system. The only problem you are likely to encounter

line is really creating a variable called "Mark". Don't panic if that seems a little odd; it just means that you can't use NAME as a variable name. You can prove this using SET:

```
1>SET
Mark Smiddy
process        1
RC             0
Result2        0
```

HIDDEN COMMANDS

A more important use of local variables is to hold constant variables (more correctly called constants) in scripts. The difference between a constant and a variable is that the contents of a constant never (or rarely) change. You can use this feature to provide a quick "command" that you can change at any time. An undocumented Shell command, $$, has this function:

```
1>$$
Workbench3.0:
```

It works like CD – you even supply arguments, viz:

```
1>$$ SYS:DE#?
1>$$
Workbench3.0:Devs
```

You can set this command to anything you want, and change it at any time. For example, to make it operate like WHY:

```
1>SET $ WHY
1>$$
The last command did not set a return code
```

Generally speaking, ALIAS is better used for this function, but there are cases when environmental variables are better. For example, if you were using automatic command insertion with "`". (Don't confuse "`" with "'": on UK keyboards, "`" is accessed by holding ALT while pressing "'".) Try this:

```
1>SET COM DATE
1>ECHO "Time-" "`$COM`" LEN 8
Time- 21:09:38
```

Although it would be a little pointless in this example, you can change the command in this line without having to modify the line itself. A global variable used like this can be changed by calculation (in a script, for instance) but that is beyond the scope of this feature. Note also in the previous example that two quoted strings are used. ECHO applies the LEN function to each string – displaying up to the last eight characters of each.

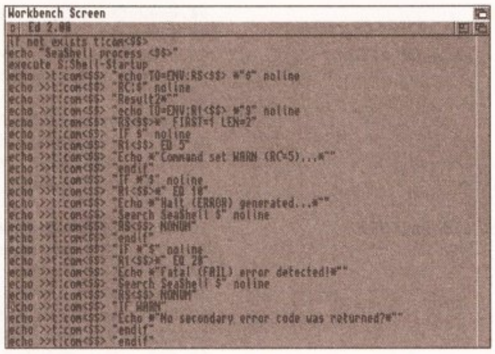
A FISTFUL OF DOLLARS

Although Environmental variables seem like the universal solution to a lot of problems, they are not without problems of their own. For example, what happens if you include a variable name that does not exist on the command line? Try this:

```
1>ECHO "$AmigaShopper"
$AmigaShopper
```

LISTING 1: LOOP

```
1. .key count
2. setenv loop 1
3. lab start
4. echo "loop: $loop `eval $loop+1 to env:loop`"
5. if val $loop not ge `eval <count>+1`"
6. skip start back
7. endif
```



SeaShell is a fairly lengthy script – these ECHO statements construct a script all on their own; but watch out for the single ">" on the first line in this screen.

Generally speaking this is harmless, but it is something you have to watch out for – especially if you use dollars in your scripts. It is important to note that the special script sequence "<$$>" (insert process number) is a script function and changing the dollar symbol has no effect on environmental variables; it's just a confusing clash.

There is no limit to the number of environmental variables you can include on a line, but you have to be careful how you separate them. A single space between each variable is enough, but there are times when you may want to construct a number or string from a variables. Variable names can contain any alpha-numeric character (a-z, 0-9) but they cannot contain punctuation. If you include valid characters after a variable, it will not be interpreted correctly. For example:

```
1>SET A 1
1>SET B 2
1>ECHO $A$B   ; this is OK
12
1>ECHO $A00$B; this is not!
$A002
```

If you really want to include the output of a variable in this way, one solution is to use "output insertion". This technique is only valid once in the command line, which is a pity really; we could re-write the above example thus:

```
1>ECHO $A00$B; the wrong way to do it…
$A002
1>ECHO `get a`00$B   ; …and the right way
1002
```

A final point worth noting here is that the asterisk (star) character can be used to escape the dollar sign if you want to use it as a literal as in these before-and-after examples:

```
1>set price 5
1>echo "That'll be $$price, please"
 That'll be price, please
1>echo "That'll be *$$price, please"
 That'll be $5, please
```

GLOBAL VARIABLES AND COUNTERS

Global environmental variables first made their appearance with AmigaDOS 1.3, but the following examples are only executable from AmigaDOS 2 because of differences in the handler. All global variables are stored in the ENV: assignment – normally RAM:Env for speed. Such variables are files; there's nothing special about them and they can be manipulated by normal AmigaDOS filing system commands.

Note the different command in the following examples – it's easy to confuse SETENV and SET until you get used to them. A good aide-memoire is to think since globals are being stored in ENV:, you use SETENV to create them. For example, you will normally create a global variable like this:

```
1>SETENV MyName Smiddy
```

But you could do the same thing using ECHO:

```
1>ECHO TO ENV:MyName "Smiddy"
```

Similarly, the following two commands clear this variable using two different methods:

```
1>UNSETENV MyName
1>DELETE ENV:MyName
```

Clearly, it's a lot shorter and easier to read if you use the correct command, but since globals are defined as files you can do a lot more with them than just this. Assuming you have cleared the local variables, "A" and "B" defined earlier, you can enter this example:

```
1>setenv a 1
1>setenv b 2
1>echo "$a+$b=`eval $a+$b`"
1+2=3
```

Using some extra trickery, it is possible to increment a variable in the line that displays it like this:

```
1>setenv a 1 ; make sure it's set to something
1>echo "count=$a `eval $a+1 to env:a`"
count=1
1>echo "count=$a `eval $a+1 to env:a`"
count=2
1>echo "count=$a `eval $a+1 to env:a`"
count=3
```

Note that the variable, C in this case, must be defined before you try to do something with it. This

is getting the listing on to disk, but if you have a modem you can get it from the Compulink Information Exchange CIX. Also, PD software houses are granted license to distribute to the code under the Freeware banner.

ENTERING SEASHELL

SeaShell is a fairly long program written entirely in AmigaDOS and it has to be entered using some form of text editor. The original was generated using the AmigaDOS editor, ED but if you have a better one (Cygnus ED for instance) I would strongly advise using that instead. Don't use a word processor; most will add line breaks where they do not belong, even if you save using an ASCII export option.

In the halcyon days of microcomputers like the C64 and ZX Spectrum, magazines were filled with listings (in BASIC) very much like this. Unlike those early BASICs though, AmigaDOS does not use line numbers. In the AmigaDOS column, the line numbers serve a dual purpose. First, they show where each line starts so you don't mix two lines together; second, they allow me to take you through the program a line (or step) at a time.

Occasionally there are exceptions – SeaShell is an example. A list of error codes is built into the program, starting just after step 69. SeaShell uses these codes to suggest what might have gone wrong when AmigaDOS reports an error. Another important point is that ED will break long lines while you type them. This affects a few lines in SeaShell – when it happens, enter the whole line and use the join command (ESC-J) to glue the line back together. SeaShell should be saved in your System drawer and you should create a project icon (the Shell will do) for it with the tooltype of "C:IconX" and the following Tooltypes:

```
Window=CON:///199/SeaShell
DONOTWAIT
```

You can also use SeaShell directly from AmigaDOS by saving a copy in S: and executing it thus:

```
1>EXECUTE SEASHELL
```

LISTING: SEASHELL

```
.key com/F
echo "wait..*e[6D" noline
if not exists t:SeaShell<$$>
 resident c:join
 resident c:search
 resident c:execute
 copy >NIL: SeaShell t:SeaShell<$$>
endif
echo >t:maincom<$$> "<com>"
search >env:com<$$> t:maincom<$$>
(IF|ELSE|ENDIF|SKIP|LAB|QUIT|ENDSKIP) pattern nonum
if not warn
echo "*"$com<$$>*" is only valid in a script (command file)."
skip end
endif
search >env:com<$$> t:maincom<$$> "DELETE"
if not warn
echo "This command may remove a lot of files..."
ask "are you sure that is what you want to do?"
if not warn
 echo "*nWhy not use DIR to check the pattern and options."
 skip end
endif
endif
if "<com>" EQ "ENDCLI"
skip quit
endif
if "<com>" EQ "ENDSHELL"
skip quit
endif
if not exists t:com<$$>
echo "SeaShell process <$$>"
execute S:Shell-Startup
echo  >t:com<$$> "echo TO=ENV:RS<$$> *"$" noline
echo >>t:com<$$> "RC:$" noline
echo >>t:com<$$> "Result2*""
echo >>t:com<$$> "echo TO=ENV:R1<$$> *"$" noline
echo >>t:com<$$> "RS<$$>*" FIRST=1 LEN=2"
echo >>t:com<$$> "IF $" noline
echo >>t:com<$$> "R1<$$> EQ 5:"
echo >>t:com<$$> "Echo *"Command set WARN (RC=5)...*""
echo >>t:com<$$> "endif"
echo >>t:com<$$> "IF *"$" noline
echo >>t:com<$$> "R1<$$>*" EQ 10"
echo >>t:com<$$> "Echo *"Halt (ERROR) generated...*""
echo >>t:com<$$> "Search SeaShell $" noline
echo >>t:com<$$> "RS<$$> NONUM"
echo >>t:com<$$> "endif"
echo >>t:com<$$> "IF *"$" noline
echo >>t:com<$$> "R1<$$>*" EQ 20"
echo >>t:com<$$> "Echo *"Fatal (FAIL) error detected!*""
echo >>t:com<$$> "Search SeaShell $" noline
echo >>t:com<$$> "RS<$$> NONUM"
echo >>t:com<$$> "IF WARN"
echo >>t:com<$$> "Echo *"No secondary error code was returned?*""
echo >>t:com<$$> "endif"
echo >>t:com<$$> "endif"
endif
join t:maincom<$$> t:com<$$> as t:maincom2<$$>
failat 21
execute t:maincom2<$$>
failat 10
lab end
echo "<$$>.`cd`> " noline
execute >NIL: t:SeaShell<$$> ?
lab quit
echo "SeaShell process <$$> ending..."
delete t:(maincom2<$$>|com<$$>|seashell<$$>|maincom<$$>) quiet
quit
Enter everything here. Numbers are error codes!
10:205 - Probably a badly spelt command name
10:117 - Keywords (/K), while optional, require some argument
10:118 - The command requires more or less arguments. Check for
spaces
10:120 - Usually caused by too many or too few quotes
10:121 - You may need to EXECUTE this file or set the S bit using
PROTECT "file" +s
10:212 - This is not logical - are you TYPEing a directory?
10:214 - Open write protect (or UNLOCK the FFS disk)
10:222 - Use the FORCE switch to delete this file or leave it alone!
10:223 - Use PROTECT <file> +R to fix this problem
10:224 - Use PROTECT <file> +W to fix this problem
10:225 - It may be a PC disk or it may need formatting!
10:226 - Floppy drives are kits: you have to put a disk in first!
20:116 - This command requires 1 or more arguments to work
20:117 - Keywords (/K), while optional, require some argument
20:202 - The directory may be ASSIGNed or file is being used
20:203 - The destination name is already in use. Pick another name
20:204 - Directory name may be a file
20:205 - Generated when a file or directory cannot be found
20:206 - How did you get this one?
20:209 - You can't do this with this device (or command)
20:210 - How did you get this one?
20:211 - Probably an internal programming glitch
20:213 - Disk broken? You my be in trouble here
20:215 - This is not possible. Use COPY then DELETE
20:216 - Use the ALL switch if that's what you mean!
20:218 - The volume (disk) is not available. Spelling?
20:221 - The disk you are copying TO is full...
20:222 - Use the FORCE switch to delete this file or leave it alone!
20:223 - Use PROTECT <file> +R to fix this problem
20:224 - Use PROTECT <file> +W to fix this problem
20:225 - It may be a PC disk or it may need formatting!
20:226 - Put a disk in the required drive
```

This listing will be included on next month's subscribers' disk.

line is a lot simpler if you break it in two:

echo "count=$a: Displays the "count" variable.

`eval $a+1 to env:a`": Increments the value in "a" before ECHO is executed but after the $a part is expanded. This line is expanded by AmigaDOS to read (for example) "eval 1+1 to env:a". So the result, 2 in this case, is sent to a file which also happens to be the variable we're working with! You can prove that for yourself using:

```
1>GETENV a
2
```

The ingenious part here is since this is part of the ECHOed string and it never generates any printed output, this line is really two lines compressed into one. This gives rise to an interesting demo which is a great introduction to scripts (AmigaDOS command programs). Environmental variables really come into their own when used in scripts like this – and if you have never entered one before, this is a good example to start with. Enter Listing 1 in ED (without the line numbers, they're only there for reference) and save is as LOOP.

The program is executed like this:

```
1>EXECUTE LOOP 3
Loop: 1
Loop: 2
Loop: 3
```

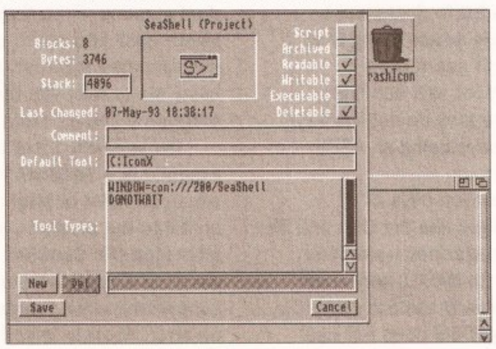
Now you might be wondering what's so clever about a program that can count from 1 to some number. Nothing in itself, but the code used is very compact. Here's how it works:

1) Takes the argument from the command line. If loop is not given a value to work with, it executes once and stops.

2) Sets the global variable "Loop" to its starting value.

3) Marks the start of the repeating loop.

4) Increments the value of "Loop" using the automatic technique described above.



Setting SeaShell's Workbench parameters from the Information window. Note how the CON: description uses a height and title parameters.

5) Literally translated this line reads: If the value (VAL) of "Loop" ($LOOP) is "not greater than or equal to" (NOT GE) count plus 1 (`eval <count>+1`). Quite a mouthful. More simply, the user's input is inserted at <count> and 1 is added by automatic insertion of EVAL's output. It's the sort of thing you rarely see because it seems too good to be true.

6) Control reaches here if "Loop" is less than "Count+1" control is transferred back to Step 2.

7) Acts as a reference for IF to jump to when the test at Step 5 is false; when the loop counter has exceeded the requested value.

CONCLUSION

By now you should have a fairly good idea of how the environmental variables work in AmigaDOS 2. The setup in AmigaDOS 1.3 is similar, but less powerful and much more difficult to control. I'll leave that for next month – something to look forward to. In the meantime, you might like to try entering SeaShell; it is a long program but the result is well worth it since it can help pinpoint many of the more common errors. Entering the code is a good exercise in itself – and you might like to try figuring out how some of it works. Alternatively, subscribers will get this program on next month's subscribers' disk. AS

AMOS Action

In the first of an occasional series covering the very basics of AMOS, Simon Green delves into the beautiful world of colour. And – don't forget to fasten your seatbelts for the Turbo extension!

We live in a colourful world. It's hard to imagine that just 50 years ago colour television was virtually unheard of, never mind colour computers. But although we all seem to take colour imagery for granted these days, relatively few people seem to understand how exactly it is created.

PAINTING WITH LIGHT

Many AMOS programmers tend to ignore colour, and just use the default palette, or a simple black background with garish red, green and blue hues. But using colour intelligently can help to make your AMOS programs more attractive and pleasant to use, and with a little effort some impressive effects can be achieved.

If you've been using the Amiga for a while, you're probably aware that all colours are specified by mixing different amounts of red, green and blue (see the beginners box for more information). The colours (R,G and B) that make up the final colour are known as the colour's components. Standard Amigas with the original (OCS/ECS) chipset use 4 bits to control each colour component. This allows 16 possible levels for each component (2 to the power of 4). This explains why the Amiga can only display 16 different shades of gray, and why the total number of different possible colours is 4096 (16 * 16 * 16).

AGA Amigas extend this system to use 8 bits per colour component allowing 256 (2 to the power of 8) different possible levels for each component. Using 8 bits per component is sometimes referred to as 24-bit colour, since this is the total number of bits used to represent each colour (8 x 3). As we all known AMOS is unfortunately still not able to take advantage of this (see AMOS News).

HUE AND CRY

In AMOS, colours are usually written as three digit hexadecimal (ie. base 16) numbers such as "$faa" or "$005". This is convenient, because each hexadecimal digit can have 16 values (0 to 9 and then a to f), and therefore each digit controls one colour component. Unfortunately, this makes it quite difficult to manipulate colours in AMOS. To make things easier, I have created a few simple user defined functions which can be seen in the "SPREAD" function in listing 1. The first, "FnMAKECOL(r,g,b)", takes the required RGB values and returns a colour number comprising all the components. The three other functions: "Fn RED(Col)","Fn GREEN(Col),"and "Fn BLUE(Col)" can be used to extract the red, green and blue components from a colour number, respectively.

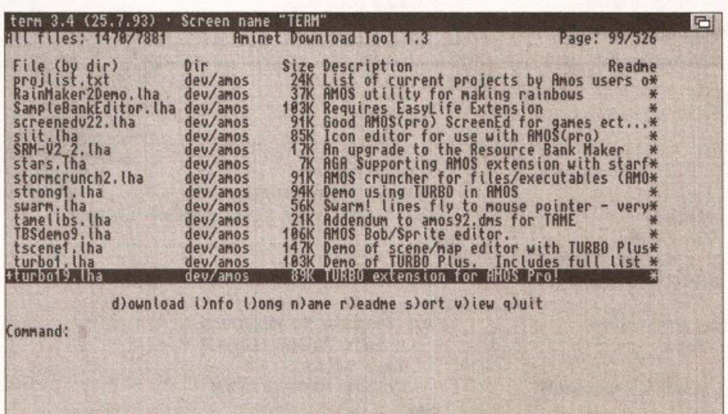
It is important to remember that no matter how many different colours it is possible to create, only a small selection of these colours can ever be displayed on the screen simultaneously. Standard Amigas can only display a maximum of 32 colours on the screen at the same time, if you don't take into account unusual display modes like EHB and HAM. The colour table, or palette, determines what colours actually appear on the screen. In AMOS you can use the "Colour" instruction to change the contents of the palette. For example, to change colour 0 to be pink, we would simply use "Colour 0,$faa".

LOW FAT SPREAD

It is possible to use the "Palette" command to change the entire palette at once, but it can be quite long and tedious to have to specify every colour in turn. To alleviate this problem, I have created for your programming enjoyment a simple colour spread function, which will automatically create a smooth spread between any two colours, in a very similar way to the "spread" button in

AMOS ON THE INTERNET

Following on from last month's "AMOS on the Net", and in conjunction with this issue's big, all-there-is-to-know feature on the Internet (turn to page 10 immediately if you haven't read it yet), here's a quick guide on where to find AMOS material on the world's largest computer network. So wax up your modem, because everybody's going surfing, surfing TCP/IP...



The Aminet – more public domain Amiga software than you could possibly imagine (or want) – and all for free!

PROGRAMMING PROBLEM

Usenet newsgroups "comp.sys.amiga.programmer" is the newsgroup for general Amiga programming and often includes contributions relevant to AMOS. If you've got any programming problems, you can post them here, and the readers of the group, which include many famous names in Amiga programming (including myself of course), will do their best to help you. Of course, you will get much more expert advice if you write to *Amiga Shopper* (*Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW) instead !

THE AMINET FTP SITE

FTP sitesftp.wustl.edu /aminet/dev/amos

This is the main Aminet FTP site, and has an ever growing selection of AMOS software, which includes the Turbo extension (see below). There is also a complete copy of the site (a *mirror* of it) at "src.doc.ic.ac.uk", which will probably be much faster for users in the UK.

nic.funet.fi /pub/amiga/programming/amos.

This FTP site, based in Finland, contains a lot of interesting material not available on Aminet, including issues of *Amoner*, an AMOS disk magazine.

WORLD WIDE WEB

Aminet is now also accessible from the Web, on an experimental basis. The address (or URL, as we say in the business) is:

http://src.doc.ic.ac.uk/public/aminet/info/www/home-src.doc.html

Several people have also expressed a keen interest in finding the address of the Amiga Web site that was shown in a screenshot in last month's issue of *Amiga Shopper*. For those of you who are interested it is:

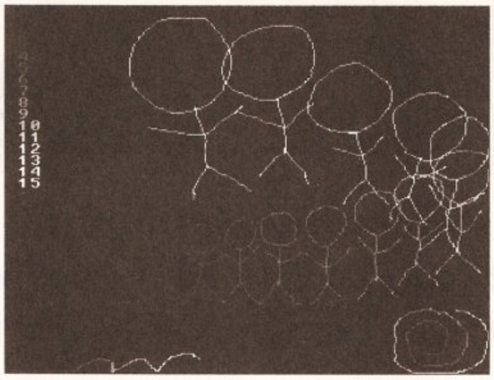
http://www.cs.cmu.edu:8001/Web/People/mjw/Computer/Amiga/MainPage.html

LISTING 1: COLOUR SPREAD

```
' Simple colour spread function
' Simon Green, 1994
'
Screen Open 0,320,256,32,Lowres
Flash Off : Curs Off : Cls 0
'
' make a pretty spread of colours
Colour 1,$F00 : Colour 10,$FF0
SPREAD[1,10]
Colour 20,$F0
SPREAD[10,20]
Colour 31,$316
SPREAD[20,31]
'
' display palette to check it works!
Paper 0 : Pen 1
For N=0 To 31
   Ink N : Bar 0,N*8 To 7,N*8+6
   Locate 2,N : Print N,Hex$(Colour(N),3)
Next
End
'
Procedure SPREAD[FIRST,LAST]
   ' Produces a smooth colour spread
   ' between colours "first" and "last"
   '
   Def Fn MAKECOL(R,G,B)=R*256+G*16+B
   Def Fn RED(C)=(C/256) mod 16
   Def Fn GREEN(C)=(C/16) mod 16
   Def Fn BLUE(C)=C mod 16
   '
   CF=Colour(FIRST)
   CL=Colour(LAST)
   NCOLS#=LAST-FIRST
   '
   DR#=( Fn RED(CL)- Fn RED(CF))/NCOLS#
   DG#=( Fn GREEN(CL)- Fn GREEN(CF))/NCOLS#
   DB#=( Fn BLUE(CL)- Fn BLUE(CF))/NCOLS#
   '
   For N=0 To LAST-FIRST
      R= Fn RED(CF)+DR#*N
      G= Fn GREEN(CF)+DG#*N
      B= Fn BLUE(CF)+DB#*N
      Colour FIRST+N, Fn MAKECOL(R,G,B)
   Next
End Proc
```

BLITS & BOBS

François Lionet's first game was Chicken Chase on the C64 which was published in the UK by Rainbird Software. It involved an amorous rooster that had to protect his hen house from all sorts of invaders whilst still managing to find time to make sure that the chickens continued to produce eggs.



When using colour cycling it's easy to create animation effects like these. All you have to do is draw each frame of your animation on the same screen, but in different colour.

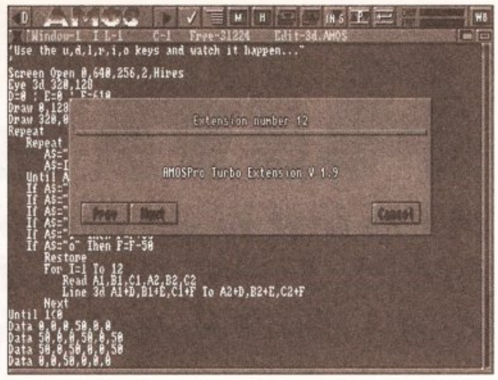
Deluxe Paint. This makes it very easy to produce nice smooth palettes. The code can be seen in listing 1. To use the function, first simply set the first and last colours in the spread in the usual way, and then call the "SPREAD" function with the numbers of the first and last colours as the parameters. The program given does a few of these spreads and shows the results to demonstrate how it works. You might like to try incorporating the spread function into a program to produce a complete *Deluxe Paint* style colour requester, with sliders and everything else you'd expect. Then again, you might not.

COLOUR CYCLING

Another interesting effect that can be achieved using colour is known as colour cycling. Most of you are probably familiar with these sort of shifting colour effects seen in demos (last month's plasma clouds program was a good example). Colour cycling works by simply shifting the contents of the palette up or down.

One of the more fun things you can do with colour cycling, apart from those painful demo-like effects, is simple animation. All you do is draw each frame of your animation on the same screen, but in a different colour. Obviously this is restricted to simple two-colour animations, but it can be very effective. The only restriction is that because you are simply drawing in different colours on the same screen, the frames must not overlap too much. To play back the animation, you simply highlight each colour in the palette in turn, whilst keeping the other colours black to hide the other frames.

A program to demonstrate colour cycling



It may not look very exciting, but the Turbo extension (read more about it under the A Free Lunch news section) can bring a new lease of life to your AMOS programs

animation can be seen in listing 2. Once you have typed it in and run it, you will be presented with a black screen. You can now draw your first frame using the mouse. I'll leave the subject of your animation to your, no doubt vivid, imagination. You can use the left mouse button to draw, but unfortunately there is no delete function (I feel erasure stifles creativity). Once you have finished the frame, press the right mouse button to go on to the next frame, and continue until you have finished drawing all the frames. At the moment the program uses a 16 colour screen, and therefore allows just 15 frames. You can change it to use a 32 colour screen, giving 31 frames, but this unfortunately means that it is impossible to see the mouse pointer. However in my experience, this will actually improve your drawing ability! Anyway, once you have finished all the frames, the program will play back the animation; first forwards, then backwards (this is called ping-ponging). Enjoy! Next month I'll tell you how to write games that use two mice simultaneously, and more!

MORE AMOS

Want to know how to program games in AMOS? If so, then get your hands on *Ultimate AMOS*, the essential guide to AMOS programming. Turn to page 82 for details on how to order a copy.

Ultimate AMOS – £19.95
By Jason Holborn
From Future Publishing, Freepost (BS4900), Somerset, Somerset TA11 6BR
☎ 0225 822 511.

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

LISTING 2: ANIMATION BY COLOUR

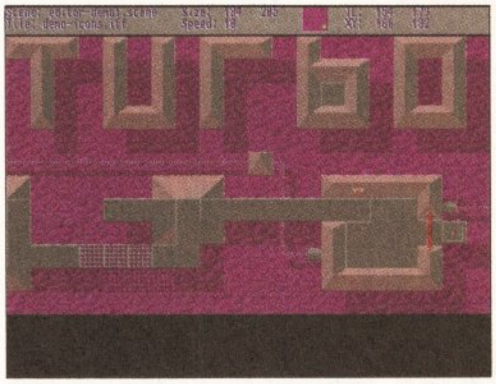
```
' Simple animation toy using colour cycling
' Simon Green, 1994
'
NOOFCOLS=16
Screen Open 0,320,256,NOOFCOLS,Lowres
Flash Off : Curs Off : Cls 0
'
HIDDEN=$0 : Rem      Background colour
VISIBLE=$FFF : Rem   Pen colour
SEETHRU=$888 : Rem   See-through colour
DELAY=5 : Rem        Playback speed
'
' set up palette and display frame numbers
Paper 0
For N=0 To NOOFCOLS-1
   Colour N,HIDDEN
   Pen N : Print N
Next
'
' record animation
Change Mouse 2 : Limit Mouse
'
For FRAME=1 To NOOFCOLS-1
   ' make current frame visible
   Colour FRAME,VISIBLE : Ink FRAME
   ' show previous frame in a darker colour
   If FRAME>1 Then Colour FRAME-1,SEETHRU
   '
   ' allow frame to be drawn with mouse
   While Mouse Key and 2 : Wend
   Repeat
      Gr Locate X Screen(X Mouse),Y Screen☛
(Y Mouse)
      While Mouse Key=1
         Draw To X Screen(X Mouse),Y Screen☛
(Y Mouse)
         Wait Vbl
      Wend
   Until Mouse Key and 2
   Bell
   '
   ' hide frame
   Colour FRAME,HIDDEN
   If FRAME>1 Then Colour FRAME-1,HIDDEN
Next
'
' play back animation ping-ponged
Do
   For FRAME=1 To NOOFCOLS-1
      Colour FRAME,VISIBLE
      Wait DELAY
      Colour FRAME,HIDDEN
   Next
   For FRAME=NOOFCOLS-2 To 2 Step -1
      Colour FRAME,VISIBLE
      Wait DELAY
      Colour FRAME,HIDDEN
   Next
Loop
```

TURBO LIBRARY WITH EMPHASIS ON SPEED

It's often said that there are two things you can never have too much of in a computer system – speed and speed. After you've been using AMOS for a while you might start to notice that some of its graphics functions aren't quite as rapid as you would like, especially when compared to some other fashionable programming languages that I could mention.

The Turbo Library is a public domain extension for AMOS that adds a whole selection of new commands to the language. As its name suggests, the emphasis throughout is on speed. The new commands include fast replacements for AMOS' graphics commands, and some very interesting and completely original commands.

The software was written by Belgian coder Manuel Andre. Fortunately the package comes complete with English documentation and a selection of AMOS programs that demonstrate the usage of all the different commands. Separate versions of the library for AMOS and AMOS Pro are provided, and the installation of either is relatively painless.



***Turbo Plus* promises even more exciting features, including this map-editor program.**

The AMOS News

There have been a lot of rumours and speculation about the future of AMOS, and the AMOS AGA extension, which is something that AMOS users have been crying out for almost ever since the AGA Chip set was first released. The news from Europress is that there is currently no development being carried out on any AMOS products. It's still being marketed and supported, but no new AMOS products are currently planned.

François Lionet, the author of AMOS, is busy working on an as yet unnamed games-creating product for the PC. Europress tell me it's object-oriented and requires no programming. Even a novice will be able to create a complete game in a couple of hours just by pointing and clicking. It sounds a bit like the Shoot-em-up Construction Kit to me, but no doubt with the talent of Mr Lionet behind it, it will be an impressive piece of software, despite its Microsoft connections.

It seems uncertain whether François will ever return to the Amiga and AMOS. Europress seem to be pulling out of the relatively unprofitable Amiga software market. It appears that it is now up to the users to support AMOS. There are several people currently working on AGA extensions, including famous AMOS programmer Aaron Fothergill, but I haven't seen anything yet. I'll keep you posted.

HIGH VELOCITY

So, what does it actually do? First of all, the library provides a number of accelerated graphics functions, including all the usual plot, point, draw, and circle commands. These perform exactly the same functions as their AMOS equivalents, but are two to three times faster. There is even a simple 3D line drawing function that enables you to draw three dimensional objects in perspective.

The second major set of commands are the "blit" commands, which allow regions of the screen to be moved around. In fact, up to 96 different scrolling zones can be defined. The blit commands are significantly faster than the AMOS scroll command, and the scrolling can be executed under interrupt, without the intervention of your program.

The next group are the block and icon commands. These are especially designed for games that use small (usually 16 by 16 pixel) tiles to make up their background graphics and, as you'd expect, they are very quick. Turbo also includes improved zone commands, which speed up collision detection considerably.

The library also has support for "vector objects". These are objects,made up of lines, which can be defined, stored, and then displayed at any position or size on the screen. An interesting concept, but I'm not sure what you'd use them for.

The demo writers amongst you will be pleased to hear that the Turbo extension also provides support for interrupt driven stars. This enables you to easily create those nice dotty starfields that are so beloved of demo creators. The extension also provides some more esoteric capabilities, including multitasking control, the ability to move bitplanes independently, bit manipulation operators and functions to obtain system information.

A FREE LUNCH

As with most of these AMOS extensions, the Turbo extension is a bit of a hit and miss affair. Some of the new commands are genuinely useful, and you'll soon wonder how you ever managed without them, but many are pretty obscure and don't really add anything to the language. My own experience has shown that the Turbo commands certainly can make your programs run a lot faster (especially if they involve a lot of moving graphics), but you have to know what you are doing to get the most from them. Seeing as the whole thing is in the public domain and therefore completely free of charge, what have you got to lose? If you write games or demos in AMOS, then you can't afford to miss the Turbo extension.

The package is available on Aminet as "turbo19.lha" in the usual"/dev/amos" directory (see last month's "AMOS on the Net" for more information). If you can't manage this, your local friendly public domain house or AMOS user group will be able to track you down a copy no doubt.

The latest version of the extension is v1.9. Unfortunately, it appears that this will be the last public domain release. "Turbo Plus", as the next version will be known, is to be sold commercially by "Playfield!", an American magazine which claims to be "the journal of creative AMOS programming". The new extension promises no less than 130 commands, and apparently includes, amongst other things, colour text support (with colourfonts), new map commands and a map editor program. I'll be reviewing it as soon as it's been released. AS

BEGINNERS START HERE

How come mixing red and green makes yellow? I myself remember being very confused the first time I started experimenting with colour in *Deluxe Paint*, all those years ago. Playing around with the red, green and blue slider controls in the palette requester just didn't seem to do what I expected.

When I was at school, you made a green colour by mixing together blue and yellow, and mixing all the colours together just made a horrible brown colour.

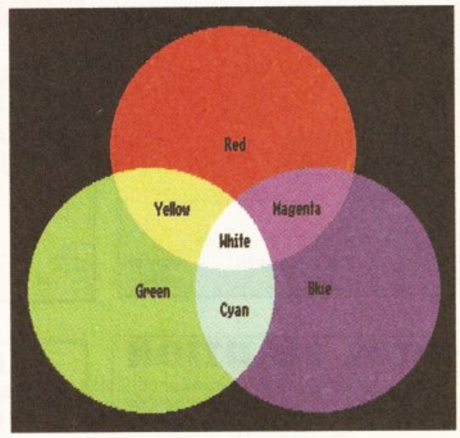


DIAGRAM 1 – Mixing different combinations of pure red, green and blue light produce various attractive new colours.

But on the computer, mixing red and green produces yellow, mixing green and blue produces cyan (turquoise), mixing red and blue produces magenta (purple), and mixing all three produces white. Weird! This is shown in diagram 1 above.

However, don't let this panic you – even my small brain soon learnt that painting with light is very different from painting with pigments. By mixing different amounts of red, green and blue light, almost any visible colour can be produced.

The reasons for this are deeply involved in the physics of light and human colour perception, but the RGB system itself is very simple to use.

For example, orange is red with about half as much green in it ($f80), and brown is a dark orange ($840). Mixing equal proportions of red, green and blue produces shades of gray (eg.$333, $888). This is illustrated in diagram 2 below.

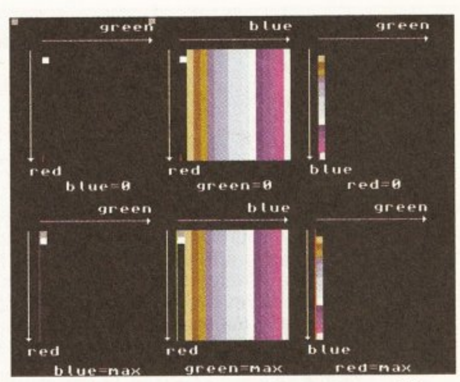


DIAGRAM 2 – By mixing different intensities of red, green and blue light almost any colour can be created.

AMIGA SHOPPER

Diane Clarke
0225 442244

ADVERTISING RATES
£30 + VAT
per Company entry

AMIGA SHOPPER MARKET PLACE
Beauford Court
30 Monmouth Street
Bath, Avon
BA1 2BW

Tel: 0225 442244
Fax: 0225 480325

We accept cheques for payment

Access VISA

LANGHAM P.D.

89 Wolverhampton Road, Codsall
Wolverhampton WV8 1PL

NOW AN OFFICIAL DISTRIBUTOR OF F1 LICENCEWARE
SEND DISK + S.A.E. OR £1 FOR A CATALOGUE DISK LISTING OVER 5000 TITLES INCLUDING:
GAMES UTILITIES, DEMOS, MUSIC, CLIPART, SLIDESHOWS, FRED FISH, ASSASSINS GAMES, T-BAG, EDUCATIONAL, ANIMATIONS AND SCOPE DISKS
PD PRICES:
35P (IF YOU SUPPLY YOUR OWN DISKS)
£1 (IF WE SUPPLY THE DISKS)
DISCOUNTS ON LARGE ORDERS 100+ DISKS
MAKE CHEQUES/P. ORDERS PAYABLE TO: R. PAYNE

ACTIVITY Software

(formerly Crazy Joe's Mail Order)

AMIGA PD/PC SHAREWARE FROM 89p
SEND 25P STAMP FOR A
FREE CATALOGUE DISK
STATING WHICH COMPUTER YOU HAVE, TO:
393 DONCASTER ROAD,
ROTHERHAM,
SOUTH YORKSHIRE S65 2UF
TEL: (0709) 377730 FAX: (0709) 838068

DO YOU OWN A MODEM?

Why not call THE PAD
1 Gig HD, 600Mb CD, 2 Gig Dat
On-Line 24Hrs 0704 834583
580Mb IDE HD's 10ms, Only £379
Inc. VAT & Delivery. TEL 0704 834335
PD 75p Send 50p or
2 1st Class stamps for a cat disk.
Cheques payable to Online PD, 1 The Cloisters, Halsall Lane, Formby, Liverpool L37 3PX

EdWord Professional V4.1 £10

The latest version of this powerful text editor is now available. It will work on any Amiga and under all versions of WorkBench. The full package boasts the following facilities:

- Can edit up to 15 documents at once (with optional Split Screen facility)
- ARexx port offering over 100 commands
- Macro facility to record/playback keyboard sequences
- Run any CLI/Shell command from within the editor
- Powerful Text Caser for programmers
- Symbolic Indentation feature to indent your source code as you type
- Complete on-line documentation in Amiga Guide (TM) format
- Power Packer support; Iconify feature; App Window and ASL support; Word Wrap; ACSCII table; Built-in calculator; various screen modes; fully configurable etc.
- Send blank disk & S.A.E. for demo version

Please make all cheques/PO's payable to: Martin Reddy.
M. Reddy, Lossiemouth House, 33 Clifton Road, Lossiemouth, Moray. IV31 6DP

ASSASSINS PD

091 258 6418

Assassins games and utilities collection are now available direct from the producers for £1 plus p+p. Why not join the ASI Club and receive 20% discount on every order.

32 Ripley Avenue, North Shields, Tyne & Wear NE29 7SA

ASTROLOGY

Wide range of programs for Amateur/Professional Astrologers free catalogue (sae 38p - 9"x7")

ASTROCALC

Dept AS, 67 Peascroft Rd, Hemel Hempstead, Herts HP3 8ER,
tel: 0442 251809, fax: 0442 248902

TOXIC SOFTWARE

28 Sandbeck Ave, Skegness, Lincs. PE25 3PX
(0754) 760665

Disk Prices	
1-10	£1·25
10-20	£1·15
20-30	£1·05
30+	£0·95
P&P	£0·70

Catalogue Disks £0·75
Blank Disks £0·35

Utilities
Animations
Slideshows
Fonts & Clipart
Demo's

Fred Fish 1-660
Games
Assassins Games Disks
LSD Legal Tools
Music

P.D

Please make cheques payable to: – TOXIC SOFTWARE PD

1st ANNUAL ANIMATION CONTEST

Accepting submissions for 2-D and 3-D animations. Your animation could appear with 100's of others in a video distributed WorldWide!
Great prizes awarded! Deadline Oct 14, 1994
For rules & info call: (209) 277-1188 or Internet: mquaschn @ mondrian. CSUFresno. EDU
BBS: (209) 447-0365 Login:Anim PW: Contest
Send tape & S.A.S.E. to:
ANIM CONTEST
PO Box 9839, Fresno, CA. U.S.A. 93794

KEW =II Software

Est.1989

TOP QUALITY AMIGA PD & SHAREWARE

CATALOGUE WITH INDEX & UTILS ONLY £1
1-3 DISKS £1.50
4 PLUS DISKS £1.25!

FREE P&P

FREE FRIENDLY HELP, POST OR PHONE ANYTIME!

PICK YOUR OWN PROGRAMS BY NAME, NUMBER & SIZE! IT'S EASY!

P.O. BOX 672
SOUTH CROYDON
SURREY CR2 9YS
TEL: 081 657 1617

THE LEADER - OTHERS CAN ONLY FOLLOW!

TOTAL SOLUTION

Tutorials for Programming, Graphics, Music, AmigaDOS, Games Creation and much more, for both the beginner and the advanced. All this, neatly packaged in a Disk-Based Magazine.

Send £3.00 to the address below for your copy of Issue 2 and receive the first issue absolutely free!

Total Solution (AS), Challenge Logic, PO BOX 28, Mansfield, Notts NG19 8LZ
Cheques payable to:
'Challenge Logic Club'

FREE 452 GAMES CHEATS

PD UNDERGROUND

FREE
NEW 1.3 EMULATOR
FREE CATALOGUE DISK FROM
UNDERGROUND P.D.
RING 0702 295887 NOW!

NEW AMIGA MAGAZINE

Get your copy of "Amiga Review" today!
We cover every area of the Amiga with great reviews and the latest news!
Send £2.25 for your copy payable to:
VISUAL PROMOTIONS, PO BOX 208, FOLKESTONE, KENT CT19 5EZ TEL: 0303 245378

Amiga Repairs in the Midlands

Est. 1984
A500 & A500+
£40 Inclusive of Labour and Parts.
Return Carriage and 3 months guarantee.
Send cheque & computers to:
Heath Computers, Office 10, Imex House, Kings Road, Tyseley, Birmingham B11 2AG
021 707 7160

CAPRI CD DISTRIBUTION

CDTV ALL AVAILABLE TITLES IN STOCK AMIGA CD32
75+ CDTV TITLES (MOST COMPATIBLE WITH CD32)
60+ CD32 TITLES /VIDEO CD TITLES

NEW RELEASES AVAILABLE NOW

Lock n' Load £19.99 CDTV/CD32
Aminet 2 £19.99 CDTV/CD32
CD Exchange 1 £19.99 CDTV/CD32
Gold Fish (2 CD's) £29.99 CDTV/CD32
Defender of the Crown 2 £29.99 CDTV/CD32
Grolier Ency 2 £99.99 CDTV/CD32
Euro Scene 1 £14.99 CDTV/CD32
Guinness Disk of Records 2 £39.99 CD32
Network CD & Cable £34.99 CD32

CD32 SPECIAL OFFERS

Overkill/Lunar C £14.99 Mean Areanas £14.99
Alfred Chicken £14.99 Pinball Fan £19.99
7 Gates of Jambala £17.99 Prey Alien Enc £17.99

CAPRI CD DISTRIBUTION
DEPT AS1, 9 DEAN STREET
MARLOW, BUCKS SL7 3AA
TEL/FAX 0628 891022
TRADE ENQUIRIES WELCOME

MasterCard VISA

MODEMS

ALL MAKES SUPPLIED
FOR THE BEST PRICES
FREEPHONE: 0800 526 376
MJ COMMUNICATIONS

AMIGA USERS

Do you want to join one of the fastest growing Amiga user groups in the UK? We can offer benefits for all Amiga Users. Don't miss this opportunity!!

Send an **S.A.E.** for further Information to,

Northern Amiga Users Group
Dept. AS, P.O. Box 151, Darlington
County Durham, DL3 8YT. Tel: (0325) 352260

WHY PAY ££'S TO REPAIR YOUR A500 WHEN YOU CAN REPAIR IT YOURSELF

The A500 Repair Manual enables both the novice and the expert to carry out successful repairs to their Amiga A500.
Special Offer: Order now and receive *a free diagnostic disk*
Price only £5.95 including post and packing
Send cheque/PO made payable to A Plaskett to:
A Plaskett, Dept AS, 2B Meadowside, Chelmsford, Essex CM2 6LN
Tel: 0850 627066

MILITARY STRATEGY WAR GAMES

The world's leading example of machine intelligence in the field of wargaming.
Send S.A.E. for details to:
K W Software
155 Ringinglow Rd, Sheffield S11 7PS

FREE DISK CATALOGUE

0928 732 550
NO LISTS - NO HUNTING IT'S A UNIQUE DATABASE THAT'S POWERFUL AND HELPFUL AND ONLY AVAILABLE FROM US

Amigraph — The very best PD

First sub-dealer in Belgium of 17-Bit.
Contact: Tijl Uilenspiegelstraat 38, 8000 Brugge. Tel 050/341594
Catalogue disk available only 90Fr
From disk 1900 onwards.
Follow 17 Bit and enjoy Amiga.

Pro-Punter

"The Best (Racing Software) Available"

- Racing Post

"DAMNABLY GOOD"
- Amiga Format (April 93)

'KING OF THE COMPUTERS"
- S.Life/Weekender (November 93)

Now in its seventh successful year, the PRO-PUNTER software will turn your AMIGA into a year round expert racing advisor. With a long history of excellent forecasting performance, users are looking forward to another brilliant flat season. Written to highly professional standards; attractive and easy to use; full edit/review facilities; unique low maintenance database; does not require daily maintenance or costly updates. 43 page user guide. Superb Flat results in 1993.

Available for IBM PC & clones, COMMODORE AMIGA, ATARI ST.
RRP £99. **SPECIAL OFFER PRICE (DIRECT FROM PUBLISHER) £85.**
GET SET FOR THE FLAT SEASON NOW! Mastercard/Visa accepted.

FREE INFORMATION PACK ON REQUEST

MasterCard DGA SOFTWARE (AMS), 437 KINGS ROAD, ASHTON-UNDER-LYNE, LANCS OL6 9AT. Tel: 061-330 0184 VISA

DISKS!

All with 100% lifetime guarantee & labels
GRADE 'A' 3.5" DS/DD

20 Disks	£6 + £2 p+p
50 Disks	£15 + £2 p+p
100 Disks	£29 + £3 p+p

PHONE US FOR ALL THE BEST PRICES ON AMIGA CD32, PRINTERS & SOFTWARE

FOR LARGER QUANTITIES PLEASE PHONE FOR THE LOWEST PRICES

THE COMPUTER SHOP, 11 ALL SAINTS PASSAGE, HUNTINGDON, CAMBS PE18 6LE
VISA TEL/FAX (0480) 435858 Access

GREAT TITLES FROM → TELESCAN

THE FINAL FRONTIER

The Official Star Trek Magazine. Produced by enthusiasts for Trekkie enthusiasts everywhere. Packed with info, music, pictures and much more. Latest issue No 7 now available.

4 DISKS - £6.00

THE CLONE

The BEST copying disk available! Contains - D-Copy 3, Freecopy 1.8, Diskmate, Superduper 3, Safecopy 2, Tetracopy, C-Copy. All with docs. All the best copiers for £2.50 FREE WITH EVERY £10 SPENT

PROJECT UFO

Over 4 Meg of UFO related text files from across the globe. Sightings, Encounters, Abductions Cover-Ups, etc etc, some highly classified. Comes complete with a text reader or you can use your own favourite word pro or text editor.

6 DISK SET - £7.50

TOP 20 TITLES

1. Stereogram Construction kit. (1)
2. Real AGA demo. 1200 Only. (1)
3. Wally World Game. (2)
4. Award Construction Kit (1)
5. How Many Tunes. (100 modules) (1)
6. Virus Checker 6.41. (1)
7. Hoi the game. 1200 only (1)
8. MultiTask Copier 1.4. (1)
9. Galaga 2 game. (1)
10. Doop music. (1)
11. 3D in the 90's. (Stereograms) (1)
12. Bodyshop 7 Slide. 1200 only. (2)
13. Morphy/Magic Man. Not 1.3 (1)
14 Octatutor 2 (1)
15. Big Girls AGA (1)
16. PC Task 2 (Includes Dos disk) (2)
17. Lock Pic 2 (1)
18. V.Chess 2. Not 1.3 (1)
19. Sequential demo. Any Amiga.(1)
20. X-Beat Pro. (1)

£1.50 Each - 5 or more £1.00 Each

SPECTRUM EMULATOR 2

The latest version of this popular emulator. Comes complete with SEVENTY all time classic games all ready to load and run. Runs OK on 1200 but slow on other machines. **8 DISKS - £9.50**

STACKED DECK

The ultimate card pack! 24 Programs containing 37 card games for all tastes. Patience games, Poker games, Cribbage, Bridge, Hearts, Klondike, Blackjack, Spades, Streets & Alleys, Montanna plus many more. A must for the card sharp!

3 DISK SET - £4.50

SCANNER DISK MAG

Now in it's 3rd year and packed with the best PD programs plus reviews/news/adult section/Art/music/tips etc. Amiga Shopper rated it 10/10. Why not try the latest issue ? SCANNER is on two disks and is compatible on ALL Amigas.

2 PACKED DISKS - £3.50

SEND 4 FIRST CLASS STAMPS FOR OUR FAMOUS CATALOGUE DISK SENT FREE WITH FIRST ORDER

Please make cheques & PO's payable to N.JORDAN and post to - TELESCAN COMPUTER SERVICES PO BOX 1 THORNTON-CLEVELEYS LANCS FY5 1SH or if you prefer you can telephone your order using your ACCESS/VISA on 0253 - 829292

Real Time Clock
A1200 /A600/A500

This compact battery-backed clock measures just 7x6x2 cms! Installation is easy, it simply fits onto the parallel port (keeping your warranty intact), and incorporates a throughport enabling all other peripherals to be used.
It comes complete with a disk containing some useful utilities, including a calendar/diary program with a multiple alarm facility.

Now Just £13.99 inc VAT (plus £1 P&P)

Please make cheques/POs payable to:
Kyte Products, 45 St Ladoc Road,
Keynsham, Avon BS18 2DR
Tel: (0272) 400805

KYTE



PRO TIPSTER

The world's leading horse racing software.

Can be used for National Hunt & Flat racing.
Every British & major foreign course included.
No daily maintenance of database required.
Databases can hold up to 1000 horses' details
Races are calculated on going, course, distance, speed ratings, weight, race class & form.
Bet calculator is included in the package.
Comes complete with a comprehensive easy to understand manual. Ideal for beginners or experienced punters. No costly monthly updates are needed.
Pro-Tipster successfully predicted 318 winners out of 480 races using top two selections in each race.

Guaranteed lowest priced horse racing software currently available.
Check our competitors' adverts. Compatible with all Amiga's (1Mb required).

£19.95

To order PRO-TIPSTER make cheques/P.O. payable to:-
I.K. SOFTWARE,
28 DEVONSHIRE ROAD
GREAT YARMOUTH, NORFOLK NR30 3AL

EXCLUSIVE PD

Top Quality Service at sensible prices

(Dept AS), 7 Beresford Close, Waterlooville, Hampshire P07 5UN Tel: (0705) 642409
Office hours: 10am-7pm Mon-Fri, 10am-3pm Sat

WE STOCK
LSD Legal Tools
Fred Fish
Panorama
APDC
Scope
Amicus
Assassins Games
TBAG
Disk Magazines
Grapevine etc

Catalogue disk free with your first order or send 2 x 25p stamps

DEMOS
Complex: Real (AGA)
Cryptoburners: Crash Test (AGA)
RamJam: Taste the Difference (2) (AGA)
Syntex: Aluminium
Andromeda: Sequentials
Fairlight/Virtual: Full Moon (AGA)
LSD: Jesus on E's (2 disks, 2 drives)
Rage: Neural Assault
Sagazity: Abdominizer
Sanity: Arte
Spaceballs: 9 Fingers (2)
Trojans Techno Tracks
Melon: Mind Expanding
Lemon: Saere Oejine
Axis: Big Time Sensuality (2) (AGA)
Damage: Uquala (AGA)
Infect: Harmageddon (AGA)

GAMES
High Octane (2) AGA
Skidmarks
Mr Men Olympics (2)
Super Nibbly
Klodike Deluxe (3) (AGA)
CARDSETS for above: Cindy Faces, Anime, Hajime (4)
Scorched Tanks V1.75
Megaball 3.0 (2) (AGA)
Giger Tetris (AGA)
Peter's Quest
Super Obliteration
Motorolla Invaders (2) (AGA)
18 Hole Golf (2)
Arcade Classics #2
Tanx N Stuff
Deluxe PacMan

MUSIC
Biomechanoid Symphony #1 (AGA)
Chubby Brown
Capella: U got 2 Let The Music
Ebeneezer Goode
Hardcore II
LSD: Don't Panic
NFA: 3M Music #3 (AGA)
Noiseless/Spaceballs: Dizzy Tunes II (3)
Jean Michel Jarre: Docklands
War of the Worlds
Wayne's World Sample Demo (2)
Rave Samples
Octamed Pro + Tutor (2)
Octastuff Music
Doop
Spasm: I Feel Good
L7: This Ain't Pleasure (2)

AGA SLIDESHOWS
Chaos Babes Remix (2)
NFA: Phoebe Cates
NFA: Boris Vallejo (2)
NFA: Bodyshop 1 (1), II (2) III (1), IV (2), V (2), VI (2), VII (2)
NFA: Claudia Schiffer
NFA: Sherilyn Fenn
NFA: Telly Pics II (2)
NFA: Erika Eleniak
Linda Lusardi (2)
W.S: Swimsuits #1/#2/#3
GIF Beauties 1 to 18
Jurassic Park
Ferrari Slides
Nightbreed 1/2/3/4 (2 Each)
Ozone: Shed Tears (2)

100 cap. disk box £5.50
All Amiga Dust Covers...£2.00
Mouse Mat £2.00
Drive Cleaner £2.00
50 DSDD disks £20.00
100 DSDD disks £39.00

All PD disks £1.00 each
Postage: UK 50p
Europe add 20p per disk
World add 40p per disk

All cheques payable to Exclusive PD. Other accessories and hardware available, please call for details

IF WE HAVEN'T GOT IT... WE'LL GET IT AT NO EXTRA CHARGE

AMIGA REPAIRS

FIXED CHARGE ONLY £42.99 Incl.

Est. 12 Years

- FIXED CHARGE INCLUDES PARTS, LABOUR, DELIVERY, VAT
- 90 DAY WARRANTY ON ALL REPAIRS
- 24 HOUR TURN-AROUND ON 95% OF REPAIRS
- ALL UPGRADES PURCHASED FROM US FITTED FREE WITH REPAIR
- INCLUDES REPAIRS TO DRIVE & KEYBOARDS, ADD £10.00 IF NEED REPLACING, FULL DIAGNOSTIC TEST AND SERVICE

In Stock — **SPECIAL OFFERS** — New Low Price

A500 INTERNAL DRIVE *Simple to fit, fully documented*	£38.99
A600/A1200 INTERNAL DRIVE *Simple to fit fully documented*	£41.90
KICKSTART 1.3 ROM *For software compatibility*	£25.00
KICKSTART 2.05 ROM *Upgrade to A500+ ROM*	£29.90
SUPER DENISE *Excellent value*	£28.70
68000 CPU	£15.00
A500 MODULATOR *Exchange/Repair*	£18.00
A500 KEYBOARDS *Factory new, Genuine part*	£44.10
FATTER AGNUS 8372A *1 Meg chipram compatible*	£36.50
CIA IC *Printer, Serial, Drive ports*	£9.20
GARY IC	£11.50
PAULA IC	£19.95
A500 PSU	£25.00

⚠ ATTENTION ALL DEALERS ⚠

Our company now offer the most competitive dealer repair service.
Full credit facilities available.
Send for our FREE information pack today...

AS08

We reserve the right to refuse repair for whatever reasons
Prices only valid with this coupon

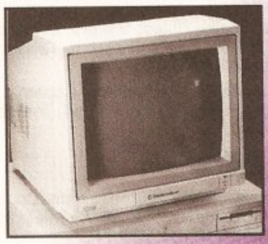
Service HOTLINE (0533) 470059
DART Computer Services
105 London Road
LEICESTER LE2 0PF

Access VISA

DART Computer Services

AMIGA REPAIRS & SPARES

★ FREE ESTIMATES ★ NO STANDARD CHARGES ★
★ MOST REPAIRS 48 HOUR TURNAROUND ★ 3 MONTH WARRANTY ★
★ COLLECTION/DELIVERY ARRANGED ★
★ FREE TECHNICAL HELPLINE ★



MONITOR REPAIRS

WE NOW REPAIR ALL AMIGA COMPATIBLE MONITORS

Including Commodore 1084 & the entire Philips range.
REPAIRS to A600s & A1200s also undertaken

MAIL ORDER HARDWARE SALES

A1200 Race & Chase Pack £289.95
A4000-030 4MB 214MB HDD £999.95
Hewlett Packard HP520 £279.95
A1200 Combat Pack..............£339.95
Canon BJ-10SX printer £179.95
Star LC-100 Colour Printer ..£139.95

We can part exchange your existing equipment on any of the above

A520 MODULATOR BROKEN?

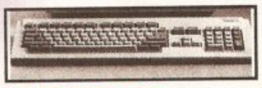
We will repair & return it for just £15.00 inc.

★★★★★★★★★★★★★★

WE WILL COLLECT FROM YOUR DOOR TODAY
(If advised before 10am & in UK mainland)

A500 Rom Switcher £14.95
High Res Denise £22.50
5719 Gary...........................£13.00
68000 Processor £5.00
A600 Rom Switcher £14.95
8520 CIA..............................£9.95
Paula £12.95

A500 MODULATORS
Repaired & returned for just £15.00 inc



HAWKWELL ELECTRONIC SERVICES

Mount Bovers Lane, Hawkwell, Hockley, Essex SS5 4JB
Orders & enquiries Southend-on-Sea .Tel 0702 207593, Mon-Fri 9am-5pm
Technical helpline Southend-on-Sea 0702 207274 Mon-Fri 9am-5pm
Callers welcome Monday -Friday only 9am-5pm

Find your local group

Your at-a-glance guide to every Amiga user group in the world.

SOUTHEAST AND EAST

Addlestone 1–1 Amiga Club. Contact Peter Duckett ☎ 0932 855834 after 8pm.

Ashford Kent Youth Computer Group. Contact Jim Fanning ☎ 0233 629804.

Banstead Limited Edition Software. Contact Les, 28 Congcroft Avenue, Banstead, Surrey SM7 3AE.

Brentwood Hermit Computer Club. Contact John Maynard ☎ 0277 218897.

Brighton Hanover Computer Club. Contact Colin Jones ☎ 0273 602834.

Bromtard Better Than Life. Contact Mark Waters, 7 Linton Downs, Bromtard, Herefordshire HR7 4QT.

Camberley Camberley User Group. Contact F Wellbelove ☎ 0252 871545.

Cambridge Cambridge Sixty-Eight Group (CASE). Contact EPL Rowell ☎ 0954 210692.

Chesham Beaconsfield and District CC. Contact Philip Lishman ☎ 0494 782 298.

Clacton Cheapo PD Club. Contact Jason Meachen, Ivy Cottage, Chapel Road, Beaumont, Clacton, Essex CO16 0AR.

Coulsdon The Crumblies. Contact Frank Barron ☎ 081 668 7695

Coventry Cov and Warb Commodore Computer Club. Contact Will Light ☎ 0203 413 511.

Enfield Enfield Amiga Club. Contact Sean Clifton ☎ 081 8042867

Folkestone Amiga 101. Contact D Cryer ☎ 0303 245 378.

Gerrards Cross Chic Computer Club. Contact Steve Winter ☎ 0753 884473.

Hastings Computer Club. Contact ☎ 0424 421480.

Horsham Amiga Zone. Contact Gareth and Raymond, 7 Swindon Road, Horsham, W. Sussex RH12 2HE.

Ipswich Not the Night. Contact Andrew, 8 Lanark Road, Ipswich, Suffolk IP4 3EH.

Ipswich MicroAcid. David Charman 0473 626226. 85 Carlford Close, Martlesham Heath, Ipswich, Suffolk, IP5 7TA.

Leigh-on-Sea Sensible. Contact M Street, 158 Hadleigh Road, Leigh-on-Sea, Essex SS9 2LP.

Leigh-on-Sea The Swop Shop Club. Contact Ian Prentice ☎ 0702 710267.

London (East Ham) Amigaholics Club. Contact Kevin Bryan ☎ 071-580 2000 Ext 240.

London (Hampstead Garden Suburb) Amiga Club. Contact Imp ☎ 081 455 1626.

London (Winchmore Hill) Access Information Technology.Contact Darren ☎ 0956 229729.

London Twilight. Contact 13 Mavis Court, Ravens Close, London NW9 5BH.

Luton Amiga Users Group. Contact Dave ☎ 0582 481952.

Mitcham PD for Beginners. Contact M Macias, 48 Lavender Grove, Mitcham, Surrey CR4 3HU.

Mundesley APDEG (Amiga Public Domain Exchange Group).Contact Richard Brown ☎ 0263 720868.

Newington Sittingbourne Co-op Amiga Club. Contact Andy ☎ 0795 842608.

Norwich AGA Exchange. Contact K. Phillips, 18 Brownshill, Cromer, Norwich NR27 0QA.

Norwich Magic Windows. Contact Frame, 26 St Benets Road, Stalham, Norwich, Norfolk NR12 9DN.

Orpington ICPUG South East. Contact Ien Beard ☎ 0689 830 934.

Romford Digital Disk Amiga. Contact David Cowell ☎ 081 590 2546.

Rye Rye Amiga Group. Contact Oliver Campion ☎ 0797 222876.

Southampton Blitz programming Club. Contact mr D Collins, 6 Bentley Green, Southampton SO18 5GB.

Southend-on-Sea Southend Team. Contact ☎ 0702 333974.

Sutton Agnus. Contact Philip Worrel, 115 Brocks Drive, North Cheam, Sutton, Surrey SM3 9UW.

Thetford Bizart Diskmag. Contact Stephen Marghan, Timberton House, The Mount, Buckenham Tofts, Thetford, Norfolk IP26 5HP.

Thornton Heath AmigaBASIC club. Contact: Imran Ahmad ☎ 081 689 9102.

Watford Hertfordshire Amiga Users Group. Contact Keith Alexander ☎ 081 421 1784.

West Watford AmigaSoc. Contact Neil Cartwright ☎ 0923 248483.

Witham Amiga Witham Users Group. Contact K Anderson ☎ 0376 518271.

Yarmouth Robotronix Amiga Club. Contact P Symonds ☎ 0493 667161

SOUTHWEST

Bodmin Amiga Users Klub (Bodmin). Contact Jack Talling, 1 Windsor House, 19 Castle St, Bodmin, Cornwall PL31 2DX.

Bournemouth Bournemouth Amiga Club. Contact P Chamberlain ☎ 0202 296714.

Bristol Avon Micro Computer Club. Contact Roger or Bob ☎ or Fax 0272 311642.

Bristol Bristol Amiga Club. Contact 3 Parkstone Avenue, Horfield, Bristol BS7 0BX.

Bristol EmuSoft. Contact Nalpex, 48 Longhandstones, Cadbury Heath, Bristol BS15 5AP.

Bristol Game Swap Club. Contact Ade Ajidahun ☎ 0272 240399

Dukinfield C.C. Swapshop. Contact Tom Hampson ☎ 061 339 9488.

Exeter Exeter 16-bit User Group. Contact Andrew Deeley or Phil Treby at 25A Gloucestershire Rd, Exwick, Exeter, EX4 2EF.

Reading Charlies PD. Contact Charles Read, 10 The Cedars, Tilehurst, Reading, Berks RG3 6JW.

Salisbury CHUD. Contact Mr M Sellars ☎ 0980 33154.

Taunton Imagine Object Makers. Contact Charles Mo, 16 Calder Crescent, Taunton, Somerset TA1 2NH.

Torquay Ami-Info. Contact Paul Caparn, Homeside, Higher Warberry Road, Torquay, Devon TQ1 1SF.

MIDLANDS

Birmingham 68000 in Birmingham. Contact Mike Bedford–White, 16 Westfield Rd. Acocks Green, B'ham B27 7TL.

Birmingham Software Exchange Service. Contact Michael Pun ☎ 021 459 7576.

Coventry Coventry and Warks Commodore Computer Club. Contact Will Light ☎ 0203 413511.

Derby Living Poets Society. Publication and appraisal of creative writing, (free PD). Cyberspace. Darkside on the net. Sean Woodward. Fido 2: ☎ 2503/104; 11. Menin Road, Allestree, Derby,DE22 ZNL, UK. £10/Year- £40 Life.

Hereford Hereford Amiga Group Help. Contact John Macdonald ☎ 0981 21414.

Loughborough BR & CJ Computer Club. Contact B Robinson ☎ 0392 72889 or ☎ 03922 841296.

Melton Mowbray Melton Amiga Users. Contact Stephen Mowbray ☎ 0664 63421.

Nottingham East Midlands Amiga User Group. Contact Richard Haythorn ☎ 0602 298075.

Solihull Deluxe Cheats Disk User Group. Contact Steven Frew, 96 Campden Green, Solihull, West Midlands B92 8HG.

Solihull Sid The Kid Amiga. Contact Sid Reeves, ☎ 021 705 8619.

Solihull Solihull Computer Users Group. Contact Rich or Lee, 41 Leafield Road, Solihull, W. Midlands B92 8NZ.

Sutton-on-Sea Aden PD. Contact Den Rounding, 8 Primrose Lane, Miami Beach, Trusthorpe Road, Sutton-on-Sea, Lincs LN12 2JZ.

Telford Shropshire Amiga Link. Contact N Cockayne ☎ 0952 591376.

Telford West Midlands Amiga Club. Contact Kevin Genner Telford Snooker Centre, Canongate, Oakengates, Telford, Shropshire.

Witney Cacophony (Unlimited). Contact Mark Wickson, 49 Perrott Close, North Leigh, Witney, Oxon OX8 6RU.

NORTHEAST

Balby Warpdrive. Contact B Scales ☎ 0302 859715.

Barnard Castle Amiga Users' Club. Contact Paul Kellett 67 Green Lane, Barnard Castle, County Durham DL12 8LF

Barnsley Amiga Programmers' User Group. Contact Andrew Postill, 2 Selby Road, Newlodge, Barnsley, South Yorkshire S71 1TA.

Catterick Champion PD Club. Contact Steve Pickett, 31 Somerset Close, Catterick, N Yorkshire DL9 3HE.

Chester-le-Street Chester-le-Street 16-Bit Computer Club. Contact Peter Mears ☎ 091 385 2939.

Darlington Darlington Commodore Users Club. Contact Steve Wheatley, 1 Ruby St, Darlington, Co Durham DL3 0EN.

Darlington Jemsoft Amiga Users. Contact Danwood, 3 Cavendish Drive, Darlington, Co Durham DL1 2GQ.

Darlington Northern Amiga Users Group. Contact Membership Secretary, PO Box 151, Darlington, County Durham DL3 8YT.

Durham The Amiga Club. Contact G Starling, 31 Pine Lea, Brandon, Durham DH7 8SR.

Harrogate Club 68000. Contact Chris Hughes ☎ 0423 891910.

Houghton-le-Spring Club Amiga. Contact Chris Longley, 5 Bowes Lea, Shiney Row, Houghton Le Spring, Tyne and Wear.

Keighley Pennine Amiga Club. Contact Neville Armstrong ☎ 0535 609263.

Mickley Nothing But AMOS Monthly disk magazine. Contact Neil Wright ☎ 0661 842292.

North Berwick East Lothian Amiga Group. Contact Mr J Curry ☎ 0620 2173.

Otely Harley's PD Swaperama. Contact G Varney ☎ 0943 466896.

Rotherham Software City. Contact N Richards ☎ 0709 526092.

Sheffield Steel PD. Contact James Whitehead, 33 Middle Cliffe, Drive Crowedge, Sheffield S30 5HB.

Spalding TDM. Contact Gedney Marsh, Spalding, Lincs.

Sunderland Blitter. Contact Philip Kruman, 213 Fordfield Rd, Sunderland SR4 0HF.

Sutton-on-Sea Aden PD Club. Contact Den Rounding, 8 Primrose Lane, Miami Beach, Trusthorpe Road, Sutton-on-sea, Lincs LN12 2J2.

Tunstall The Amiga Studio. Contact Dave Rose ☎ 0782 815589.

Washington Mainly Amiga. Contact Ray Scott ☎ 416 9189.

Whiteley Bay Club Futura. Contact G Holland, 16 Hermiston, Monkseaton, Whitley Bay, Tyne and Wear NE25 9AN.

NORTHWEST

Accrington New Hall Amiga Users Club. Contact Bill Grundy ☎ 0254 385365.

Blackburn Blackburn Amiga Users Group. Contact Eric Hayes ☎ 0254 675625.

Blackpool Channel Z Diskmag. Contact Darren Busby, 3 Edelston Rd, Blackpool FY1 3HN.

Fleetwood Fylde Computer Club. Contact Colin Biss ☎ 0253 772502.

Lytham St Annes Amiga Users Group Part 2. Contact Andy Wilkinson ☎ 0253 724607.

Oswaldtwistle Hyndburn Amiga Users Club. Contact Nigel Rigby ☎ 0254 395289.

Skelmersdale Computeque. Contact Steve Lalley ☎ 0695 31378.

Stamford Under 18 Only. Contact Joe Locker ☎ 0780 64388

SCOTLAND

Angus Angus Amiga CDTV club. Contact J Robertson ☎ 0356 623072.

Bathgate Lothian Amiga Users Group. Contact Andrew Mackie, 52 Birniehill Ave, Bathgate, W Lothian EH48 2RR.

Cowdenbeatrh Amiga FX. Contact Ryan Dow ☎ 0383 511 258.

Dundee Tay-Soft PD Club. Contact Dave Thornton ☎ 0382 505437.

Dunfermline Dunfermline Sound & Vision Club. Contact Stan Reed, 7 Maxton Place, Rosyth, Dunfermline, Fife KY11 2DG.

East Lothian Amiga Club (every 2nd week). Derek Scott ☎ 0620 823137, (Saturday 1 - 4pm). Bridge Centre, Poldrate, Haddington, East Lothian, Scotland.

Edinburgh Edinburgh Amiga Club. Contact Stephen Fradley ☎ 031 555 1142.

Edinburgh Edinburgh Amiga Group. Contact Neil McRea, 37 Kingsknowe Road North, Edinburgh EH14 2DE.

Glasgow Amiga Helpline. Contact Gordon Keenan, Amiga Helpline, 6 Skirsa Square, Glasgow G23.

Hawick Borders Teri Odin BBS. Derek Scott, 0450 373071. 26d Harden Place, Hawick, Borders, Scotland.

Inverness Highland PD.Contact David Paulin ☎ 0463 242431.)

Johnstone Using AMOS. Contact Colin McAllister ☎ 0505 331342.

Perth Perth and District Amateur Computer Society. Contact Alastair MacPherson 137 Glasgow Rd, Perth.

Redburn Redburn Computer Users Group. Contact Ruby Anderson ☎ 0294 313624.

WALES

Bangor Amiga Maniacs. Contact Johnny, 8 Tan-y-Grais, Caernarfon Rd, Bangor LL57 4SD.

Carmarthen Bloomfield Video and Computing. Contact Mrs Beryl Hughes ☎ 0267 237522.

Clwyd ShieldSoft PD. Write to 26 Doren Avenue, Rhyl, Clwyd LL18 4LE, ☎ 0745 134 3044.

Clwyd Solo (Amiga). Contact Mike, 26 Doren Avenue, Rhyl, Clwyd LU8 4LE. ☎ 0745 343044

Neath Amiga Navigation. Contact Dave Thomas 4a, Allister St, Neath, W Glamorgan.)

Powys Blue Bedlam. Contact Michael Grant ☎ 0873 811791.

N IRELAND

N Ireland N. Ireland Amiga User. Contact Stephen Hamer, 98 Crebilly Rd, Ballymena, Co Antrim BT42 4DS.

N Ireland Digital Intensity (diskmag). Contact Simon Denvir, 40 Old Cave Hill Rd, Belfast BT15 5GT.

SPECIAL INTERESTS, BBSs

1520 Plotter Group (ICPUG) John Bentley

☎ 06286 65932. (AS40)

1520 Plotter Group. Contact John Bentley ☎ 06286 65932.

Amiga Buzz BBS. Contact David Clift on ☎ 0924 491 461.

Angus Amiga Musicians Club. Contact Gavin Wylie, Guthrie Street, Carnoustie, Angus.

Animeiga BBS Contact Nick Polwin ☎ 0462 483 981 .

Basingstoke AMOS Programmers Exchange. Contact J Lanng, 7 Majestic Rd, Hatch Warren, Basingstoke, Hants RG22 4XD.

Bidwell BBS. Contact SYSOP Mark Lunt Modem ☎ 0582 863 906.

Birmingham The Junction Box BBS. Contact mark Pegler ☎ 021 321 2235.

Borders Teri-Odin BBS. Contact Derek Scott ☎ 0450 373 071.

Branston Fen Amiga Boatowners. Contact D Beet Lock, Branston Fen, Lincolnshire LN3 5UN.

Braunston Nr Daventry GFA Basic Forum. Contact J Findlay ☎ 0788 891197

Braunston, Nr Daventry Amiga E Support Group. Contact John Findlay ☎ 0788 891197.

Broadstairs AMOS Programmer Club. Contact Gareth Downes-Powell, 6 Brassey Avenue, Broadstairs, Kent CT10 2DS.

Camberley Independent Commodore Products Users Group. Contact Fred Wellbelove ☎ 0252 871545

Chelmsford Independent Commodore Products Users Group. Contact David Elliott ☎ 0245 328 737

Coventry Independent Commodore Products Users Group. Contact Will Light ☎ 0203 413511

Cumbria (Barrow-in-Furness) The Power Plant BBS. Contact Neal Postlethwaite ☎ 0229 431590.

Dublin Independent Commodore Products Users Group. Contact Geoffrey Reeves ☎ 010 353 1 288 3863

Exeter Independent Commodore Products Users Group. Contact John Buckle ☎ 0392 214760

Glasgow 24-bit Club. Contact Gordon Keenan, 24-bit Club, 6 Skirsa Square, Floor 1, Glasgow G23.

Glasgow Action Replay Users Club. Contact Gordon Hagan, 66 Muirside Avenue, Kirkintilloch, Glasgow G66 3PR.

Highfields CDTV User Group. Contact Gary Ogden, ☎ 0785 227059.

Highlander BBS. Contact Alan Walker, Mark Price ☎ 0452 384702 & ☎ 0452 384557.

Impulse BBS. Contact James Norris ☎ 081 698 8978.

Lingfield In Touch Amiga. Contact P Allen, 0342 835530, PO Box 21, Lingfield, Surrey RH7 6YJ.

Liverpool Nickelodeon BBS. Contact SYSOPS Mark Williams, Tony Ross ☎ 051 709 8508 (Liverpool).

London (Richmond) Micro Academy. Contact Don Pavey ☎ 081 878 1075.

London Independent Commodore Products Users Group. Contact the Membership Secretary (Fax 081 651 3428). ☎ 081 651 5436

London On-Line Network BBS. Contact ☎ 081 539 6763 (London).

Look Northwest BBS. Contact ☎ 0282 698380 or 0282 619518.

Lothian Independent Commodore Products Users Group. Contact Andy Ruddon 65 Drum Brae Terrace, Edinburgh EH4 7SF.

Macclesfield Independent Commodore Products Users Group. Contact Peter Richardson ☎ 0298 23644

Maidenhead Independent Commodore Products Users Group. Contact Mike Hatt ☎ 0753 645 728.

Manchester CDTV Users Club. Contact Julian Lavanini, 113 Fouracres Rd, Newall Green, Manchester M23 8ES.

Mid Thames Independent Commodore Products Users Group. Contact Mike Hatt ☎ 0753 645728

New Whittington Digital Music Club. Contact Roger Hunt ☎ 0246 454280.

Normanton BASIC Programmers' Group. ContactMark Blackall ☎ 0924 892106.

Plymouth Pilgrims BBS. Contact Jon Wickett ☎ 0752 366 939.

Rochford Ray Tracers. Contact Neil Hallam, 12 Meesons Mead, Rochford, Essex SS4 1RN.

Romford Phoenix Demo. Contact Frank ☎ 081 597 4661.

Rotherham Marksman (Trojan Phazer user group). Contact David Green, 67 Thicket Drive, Maltby, Rotherham, S Yorkshire S66 7LB.

Solent Independent Commodore Products Users Group. Contact Anthony Dimmer ☎ 0705 254969

South Mostly Harmugs BBS. Contact Lee Sanders ☎ 0705 614 824.

South East Independent Commodore Products Users Group. Contact Len Beard ☎ 0689 830 934.

South Wales Independent Commodore Products Users Group. Contact Mike Bailey ☎ 0446 775287

South West Independent Commodore Products Users Group. Contact Peter Miles ☎ 0297 60339

Stevenage Independent Commodore Products Users Group. Contact Brian Grainger ☎ 0438 727925

Stoke-on-Trent Independent Commodore Products Users Group. Contact David Rose ☎ 0782 815589.

Swindon Amiga Video Producers' Group. Contact J Strutton ☎ 0793 870667 before 9pm.

Swindon MUG – MED Users Group. Contact Richard Bannister, 6 Glevum Road, Stratton St Margaret, Swindon, Wilts SN3 4AF.

System One BBS. Contact ☎ 0743 791501.

Sysop Auto Pilot BBS. New BBS, Amiga only. Wednesday Evenings from 7pm, all weekend. Generous ratio's for first 50 callers! Sysop, Gavin Dolphin, ☎ 0332 660768.

Sysop Frontier, Mathew Recardo. ☎ 0527 597531.

The Cartoon BBS. Contact the Bartman ☎ 071 635 0592.

Thetford CD BBS. Contact Paul Morris ☎ 0842 763639.

Trick or Treat II BBS. Contact Mark Meaney ☎ 0703 391 797.

Wallington Bible Bureau.Contact AD ☎ 081 669 7485.

Ware Gamer-Link. Contact Stu, 28 Churchfield, Ware, Herts SG12 0EP.

Warlock BBS. Contact Mr Manglin ☎ 031 659 5806

Warrington The CDTV Revolution. Contact Lee Beckett ☎ 0925 268819.

Watford Independent Commodore Products Users Group. Contact Bob Rigby ☎ 0923 264510

West Riding Independent Commodore Products Users Group. Contact Kevin Morton ☎ 0532 537318

Wigan Independent Commodore Products Users Group. Contact Brian Caswell ☎ 0942 213402

Witham Video Visuals. Contact Chris Brown, 4 Lavender Close, Witham, Essex CM8 2YG.

Workington AMOS Programmers Group. Contact John Mullen at 62 Lonssdale St, Workington, Cumbria CA14 2YD.

Worlingham Sliver BBS (10pm - 3am). Mat Tillett, 0502 715296. 27 Hillside Avenue, Worlingham, Beccles, NR34 7AJ.

OVERSEAS

Australia Amiga Users Group of Western Australia. Contact Bill Sharpe-Smith PO Box 595, Cloverdale WA 6105 Australia.

Australia Comp-U-Pal. Contact Comp-U-Pal, 116 Macarthur Street, Sale, Victoria 3850, Australia.

Belgium AUGFL vzw. Contact Lieven Lema, Meesberg 13, 3220 Holsbeek, Belgium.

Denmark Danish AMOS user group. Contact Tom Poulsen, DABG, postbox 127, 2640 Hedehusene, DK Denmark.

France 16-32 Micro. Contact F Moreau, 132 rue Jean Follain, 50000 Saint-Lo, France ☎ 315220 02.

France Maritime Amiga Club. Contact CDR K Osei, GN Ships Refit Office, 51 Rue de la Bretonniere, 50105 Cherbourg, France. ☎ 33 33225447.

Germany Royal Air Force Amiga Club. Contact Stan Young, HMF RAF Laarbruch, BFPO 43.

Germany Worldwide PD Club. Contact Dave White, Berliner Strasse 39, 40880 Ratingen, Germany ☎ 02102 499729 (Germany).

Gibraltar Gibraltar Amiga Users Club. Contact David Winder, 7 Lime Tree Lodge, Montagu Gardens, Gibraltar ☎ 010 350 79918.

Greece Amiga Athens club. Contact Stefanos Papamichael, 9 Derfeld Rd, Patisia, 11144 Athens, Greece ☎ 01/2027973.

Greece Amiga Pros User Group Greece. Contact Stefanos Siopoulos, 52 Silivrias Str., N. Smyrni 17123, Athens, Greece, ☎ 01/9349963.

India Indian Amiga Friends. Contact Bilal, 46 Paragon 405 Lokhandwaza Complex, Andheri (W), Bombay-400058.

Ireland Amiga Addicts. For info SAE to A Minnock, Clonkelly, Binn, Co Offaly, Ireland.

Ireland AMOS Users.Contact Brian Bell, 8 Magnolia Park, Dunmurry, Belfast BT17 0DS.

Ireland City Centre Amiga Group. Contact Patrick Chapman, 70 Ballygall Crescent, Finglas East, Dublin II, Ireland, ☎ 345035.

Ireland CUGI Commodore Users Group of Ireland. Contact Geoffrey Reeves, c/o St Andrew's College, Booterstown Avenue, Blackrock, Co Dublin. ☎ +353 1 288 3863.

Ireland Navan Computer Club. Contact Mark Arnold, Cannistown, Navan, Co Meath, Eire ☎ 046 21078.

Ireland Northside Amiga Group. Contact William Kelling, 10/A Rainsford Avenue, Dublin 8, Ireland ☎ 01 532 807.

Ireland Software Exchange Club. Contact Michael Lacey, Fern's Post Office, Enniscorthy, Co. Wexford, Republic of Ireland.

Malta HTS (Malta). Contact K Cassar, Block 1 Flat, 6 H E Hal-Tmiem, Zejtun ZTN07 Malta ☎ 674023.

Malta Malta Amiga Club. Contact Zappor, PO Box 39, St Julians, Malta, ☎ 440453

Portugal Software Asylum. Sid Sanches, Portugal ☎ 062 831566. Apartado 6156, 3000 Coimbra, Portugal.

Singapore Singapore Sling. Contact Eric Chai ML, Block 4 #14-413, Pandan Valley, Singapore 2159, ☎ 65 4680630.

Sweden 32-bit ware. Contact 32-bit ware, Ekorrstigen 10, 147 63 Tumba, Sweden.

USA Japan Amiga Group.Contact: Rick Gardaya, PSC 78 Box 3876, APO AP 96326 USA.

Note: this list is provided as a free service for amateur, non-profit-making user groups. *Amiga Shopper* does not endorse or recommend any particular group and cannot be held responsible for any losses or problems you might suffer.

WE NEED YOU – SEND IN YOUR DETAILS!

***Amiga Shopper* wants a truly comprehensive list of all the Amiga user groups worldwide. If your user group isn't listed on this page, please send the form to *Amiga Shopper* User Groups List, 30 Monmouth Street, Bath BA1 2BW.**

USER GROUPS

AS40

GROUP NAME: ....

CONTACT NAME: ....

CONTACT TEL: ....

CONTACT ADDRESS: ....

....

....

Please Tick:

☐ Southeast and East ☐ Southwest
☐ Midlands ☐ North East
☐ North West ☐ Scotland
☐ Wales ☐ Special Interests, BBSs

☐ **NEW ENTRY** ☐ **UPDATED ENTRY**

Talking Shop

What do you think? The best letter of every month wins £25, so send your thoughts and opinions to: "Talking Shop", Amiga Shopper, 30 Monmouth Street, Bath, Avon BA1 2BT.

COMPELLING COMMODORE

£25 WINNER

Having just finished reading the "Amiga Tapes" Feature in issue 38, I felt compelled to make one or two comments. Commodore do seem to be in serious financial difficulty (That's putting it mildly – Ed), but I feel, for two reasons, that this should not pose a problem for current "serious" Amiga users.

Firstly, Commodore have never seemed to really know what to do with the technology, which unfortunately has shown through in poor marketing and development. The Amiga brand seems to attractive to die alongside Commodore, and I feel that any future owner would stand a better chance of making a commercial success of the Amiga than its current owners, particularly if a new owner were for example, aggressive marketeers such as Nintendo, who would seem to have missed the CD-ROM boat, and may well deem it prudent to buy in technology.

Secondly, even if the format does meet with an unsympathetic owner, current _Amiga Shopper_ readers should still not have a great deal to fear. Together with my A1200 I also own a Sinclair QL, a machine which you may recall ceased production over nine years ago, when rescued by Sinclair Research. Since Amstrad refused to sell the design, but had no interest in producing the machine, their intention was clear... the QL was to quietly fade away.

Even now, because of the hobbyist/serious user base the QL attracted, both hardware and software are still being developed (albeit on a fairly small scale). It seems reasonable to assume that whilst game players may move on, sheer weight of numbers of serious users should ensure there is sufficient scope for profit for developers such as GVP and Soft Logik for years to come.

Antony Prime,
Crewe

Indeed. Commodore's marketing of the Amiga has been pretty minimal, mainly due to the fact that they don't have the vast amounts of cash that rich companies such as Sega can throw into TV adverts and the like. Despite this, the CD32 has done extremely well (with just under half of the CD games market), and anything that gets people buying and using Amigas can't be bad. Hopefully, the new owners of the Amiga (see page 4 for the latest news) will have money to spend on marketing the Amiga.

As you say, there will still be an Amiga market if the technology gets "lost", but I'd much rather edit a magazine where we can talk about new Amigas and lots of stunning new bits of equipment, not the budget re-releases that Amstrad and Sinclair users have to put up with. Computers (such as the Spectrum and Amstrad CPC) continue long after they have been discontinued by the manufacturers, but you will rarely see anything really exciting for them.

MUSIC MADNESS

I am in the process of setting up a non-profit making newsletter which will give composers of all standards a chance to have their work assessed by other writers and which will also give them, in turn, the opportunity to review their fellow musicians' work.

All types of music are welcome; there will be over 30 categories covering everything from pop, rap and jazz right through to brass band, orchestral, hymns, etc. Members will submit their music on tape, disk or manuscript.

The initial aim is to have a membership of approximately 100 strong, each paying a monthly fee of between £3-£5. There will be a prize of £100 for the best piece submitted each month and an annual prize of £1000 for the composition of the year. The monthly winners will be decided by the members and the annual winner by a panel of professionals from the music world. As the membership grows, so will the size of the prizes.

If any reader is interested in becoming a member, contributing articles, or would like further details, they can write to :

Mr. Dixon
1 Pembroke Place
Penrith
Cumbria
CA11 9HB

PONDERING PCS

I feel compelled to write to you regarding the state of the Amiga. The Amiga is in a dead-end situation because of piracy. Slowly and surely, the PCs are taking over. At the end of this year I will be selling my A1200 and buying a 486DX33. The reason for this is that I find the A4000 too much of an expense, compared to PCs

Mark Gerard
Wigan

You're in for a nasty shock. Most games for PCs will cost at least £45, and serious packages will cost you several hundred pounds. *Word for Windows*, for instance, will cost you around £240 while *Final Writer* or *Wordworth* will only cost you less than a hundred quid. Ray tracing programs are even worse, with the premier PC 3D package (*3D Studio*) costing around £2,500. Contrast this with *Imagine 3*, which will only cost you around £95. PC software is much more expensive than Amiga programs, so unless you are planning to use pirated copies of these programs, you'll need to spend several hundred more pounds on getting your software.

NO NEED FOR NT?

In the _Talking Shop_ of issue 37, you request letters on the subject of "the Super Amiga". A couple of observations on the inclusion of windows NT (New Technology) compatibility. Just how is this compatibility to be achieved? I can see two ways this might be done. You could pick a processor for the machine which is supported by Microsoft and then simply include a full release of the NT operating system with the machine.

The other way of implementing NT, which would require a lot more work on Commodore's part, is to again use a Microsoft supported CPU, but incorporate a copy of NT's program interface within the Amigas OS, alongside its native libraries and function calls. This way, an NT application could be fooled into thinking it was working within a standard NT setup, but actually it would be running under AmigaDos, allowing NT and native Amiga applications to multitask together.

Might we not see the complete disappearance of the Amiga as a format in its own right, becoming merely another Windows NT clone machine (albeit one with groovy hardware)?

In conclusion, I think that the introduction of NT compatibility could have as many dangers as advantages.

N D Tromans
Stourbridge

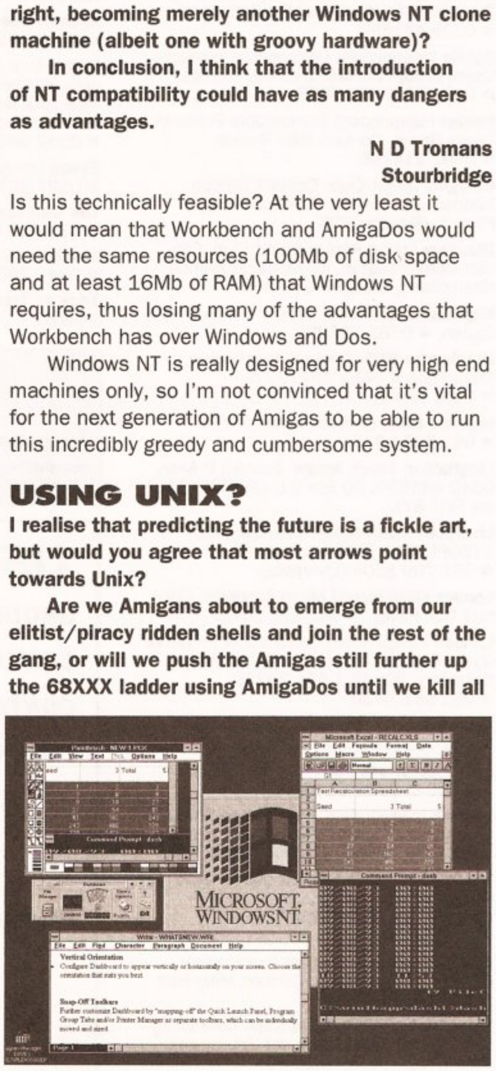
Is this technically feasible? At the very least it would mean that Workbench and AmigaDos would need the same resources (100Mb of disk space and at least 16Mb of RAM) that Windows NT requires, thus losing many of the advantages that Workbench has over Windows and Dos.

Windows NT is really designed for very high end machines only, so I'm not convinced that it's vital for the next generation of Amigas to be able to run this incredibly greedy and cumbersome system.

USING UNIX?

I realise that predicting the future is a fickle art, but would you agree that most arrows point towards Unix?

Are we Amigans about to emerge from our elitist/piracy ridden shells and join the rest of the gang, or will we push the Amigas still further up the 68XXX ladder using AmigaDos until we kill all



Will we see the complete disappearance of the Amiga as a format in its own right?

the developers around us?

Cybernaut
Reykavik, Iceland

Unix (a powerful multi user operating system) was available for the Amiga, and it was bundled with one Amiga (called the 3000UX). Unfortunately, Commodore decided not to develop this further, and there have been no new versions of Amiga Unix for several years.

Although Unix is accepted as a standard on mini and mainframes, it's never been that popular with microcomputers, so I would be extremely surprised to see it adopted as a worldwide standard, especially in the face of competition from operating systems which are much easier to use.

DIY DANGERS

Once upon a time *Amiga Shopper* promised to print articles on do-it-yourself projects and modifications. So far I haven't really seen much of these. I can't be the only one who would like to see some articles on advanced DIY projects?

Julian Hadlow
Somewhere

Hardware projects are one of the things I am currently examining, but they are fraught with difficulties as it's very easy for a user to damage their machine by wiring the project up wrong. Despite this, I am considering several projects at the moment, and I'm very interested in hearing from anybody who has a design for one that they want to get published. If you have any good ideas you know where to write! Over to you lot...

CRIMINAL COMMS

One area never covered is the illegal use of modems, or, more correctly, using illegal modems on BT lines. In all the magazines you will find many adverts offering various brands of modems, however unless you specially look for it *all* of them are illegal to use on British telephone lines. So much is written about software theft, yet nothing about this equally illegal use of modems.

James Abram
Wolverhampton

To clarify the situation slightly, it is not illegal to sell modems which are not approved by the BABT, but it is an offense to connect one to the public telephone network. As you mention, many people are using unapproved modems, although many people question the validity and necessity of BABT approval.

We at *Amiga Shopper* do not use unapproved modems, but many people (including several prominent BBSs) choose to do so. Our policy has always been, and will always be, that our readers are capable of making their own decisions. We certainly don't want to encourage people to break the law, so any future mentions of unapproved modems will be accompanied by a warning about the legality of using them.

4000 FOLLY

Being a keen user of *Imagine* and *Vista*, I recently fitted a 40Mhz 68882. This highlighted a design "feature" which must have saved Commodore a full 5 or 6 pence per machine. The FPU socket is there, but where-o-where is the socket for the FPU clock, as mentioned in the Commodore manual? If I hear the excuse "It was felt that the average user would not require an accelerated FPU" I shall scream.

The A4000 is a superb machine. It's my third Amiga, and the best yet. But when a company is in such as financially delicate position as the big C, why do they vex their clients with a combination of careless design and penny-pinching compromises?

My advice to readers wanting an A4000 would be to buy an A1200, strip out the motherboard and install it in a large biscuit tin (a Crawfords tea time assortment is ideal), link up the A1200 casing as a keyboard and voilá! You've now created a truly expandable system, something which Commodore have boasted, and failed to deliver.

Rick Parkin
Brighton

Not only would this produce an expandable system, but you could set it up to dispense biscuits by pressing the disk eject button. Those pink wafery things were always my favourite...

Penny pinching compromises? Anything that helps to bring the cost of a machine down can't be bad, but I think in this case I agree with you. The A4000 is marketed (?) as a high end machine, and high end implies that it can be easily expanded. I added an FPU to an A4000 recently, and I certainly wasn't happy to have to solder a socket on a scant few millimetres away from the CPU. One slip of the Soldering Iron, and you have a dead machine.

WIN A FORTUNE! (OR £25 AT LEAST!)

£25 COULD BE YOURS

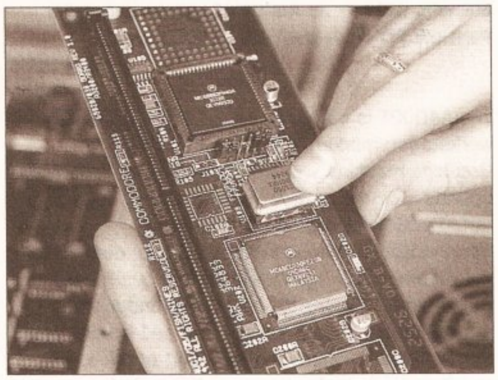
"I've got that certain nothing/No one can do without/The Spanish call it Nada/I call it nowt" said the incomparable John Cooper Clarke, but here at *Amiga Shopper* we prefer to reward sharp, incisive, witty or otherwise interesting letters. In order to do this, the best letter in every month's Talking Shop will be rewarded with a crisp cheque for £25, signed personally by Richard Gardiner, head money man at Future Publishing. Of course, if you're going to win this incredible sum, you need to know what sort of things we find interesting and which things we find as boring as a copy of *Mein Kampf*.

ENTERTAINING EPISTLES

- Interesting uses for your Amiga
- The future of the Amiga
- The Dream Operating System
- What we should do to Cliff at his leaving do.
- What you would like to see in Amiga Shopper

NOBBLY NO-NOS

- Shameless plugs for Cliff's book
- The trouble with Tribbles
- An Assembler column (it's coming, honest!)
- Why PCs aren't very good (we know)
- Why do you lay out the mag on Macs?



Fitting you own FPU would be easier if Commodore had fitted a socket for the clock. See "4000 Folly."

STRAINING SUBSCRIPTION

It would appear from your reply (to a letter from David Branwood in May 94 about subscription rates) that you misunderstood his point. To use your analogy, suppose that you bought a Vauxhall Astra for a certain price and now wish to buy a new Astra.

You discover that Vauxhall are offering a free sunroof and tape player with their new cars to anybody buying an Astra for the first time, but if you have already owned one, you don't get the freebies! I don't suppose you'd be very happy.

In the same way, why do new subscribers get offered free binders and cheaper subscriptions, but existing subscribers who renew their subscriptions do not get any of these? Of course there is a solution – allow your subscription to lapse and then take out a new subscription.

Being one of the shrinking minority in this country who can't drive and don't like cars very much, car analogies tend to go straight over the top of my head. As long as you don't ask for a trade in on your old issues, I'll let you off.

I agree with you about renewing subscriptions, which is why all subscribers (new, old, middle aged or young at heart) will now be able to take advantage of any special offers or get any freebies when they take out a subscription or renew an old one. All subscribers will also get the amazing subscribers disk as from next month, which will feature all manner of wonderful things.

FINANCIAL FAVOURS

I feel a bit disgruntled about your subscription policy – am I the only one? I've been a subscriber for just over two years, when I only had to fork out £14.95. What a bargain that was, and I suppose it was too good to last. However, the price has just escalated, and when my renewal notice dropped through the letter box this time, I had to think long and hard before sending off the cash. I now wish I had thought a little longer. Whereas I had to pay £35 for 12 issues, I notice that I could now receive 14 issues for £30 and a free binder; I can't think that other regular subscribers are too pleased either.

On the other hand, congratulations on an excellent magazine. All the problems that I've encountered so far with my Amiga have been dealt with in one of my back issues of *Amiga Shopper* – it's just a question of finding the answer. I like the idea of an index disk; the problem is finding the time to compile it.

Please keep the present contents mix about the same. Although not all of the features are relevant to my present interests or understanding, I like to feel that the information is at hand should I require it.

Chris Hibbert,
Orkney

Thanks for the words of praise, Chris. I fully intend to keep the general mixture of reviews, features and other bits the same, although you will see some changes over the next few months. Your point about the cost of subscriptions is also noted. The fact that we no longer have a regular coverdisk

BYTE BACKS

A few excerpts from some of the letters we didn't have space to print.

"I'm glad to see that tables are in *Wordworth 3* but what about scientific notation, equations and graphs?"

"Come on Commodore! Think aggressive pricing. Let's get the Amiga moving by allowing it to stretch to wider horizons. It's better to suffer now than suffer later."

Megat Hashim,
Manchester

"I personally strongly reject any moves to censor and regulate computer software. I do not consider a few stuffy MPs and journalists should have the right to dictate what computer material is suitable for me to possess."

Ian Stonelake,
Uxbridge

"One of the things that really annoys me is companies who don't bother announcing upgrades to registered users. A notable exception is Digita who realise that offering upgrades at cheaper prices will reduce pirating of the more serious software."

J Farrar
BFPO

has complicated things slightly, as it affects the costs of the magazine pretty significantly. This confusion should now be cleared up, so contact our subscription hotline on ☎ 0225 822511 of you are still having problems.

This is also a good time to mention another good reason to subscribe. As of next month, all subscribers will get a new disk with their copy of this excellent magazine. This will contain all of the listings in the magazine (so you don't have to spend long hours typing them in) as well as some of the best PD and shareware we cover in *Amiga Shopper*. This would be the ideal place for a regular index for the magazine. I'll investigate the practicalities of this.

TOWER TERROR

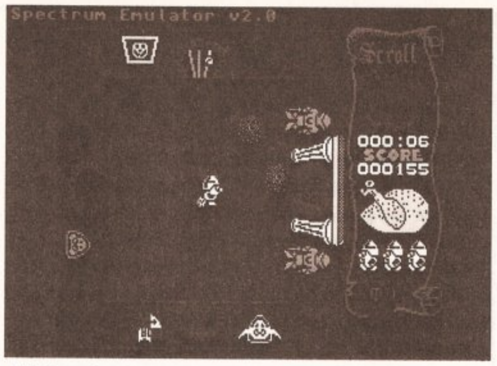
It's here at long last – the new Amiga A4000T. After what seems like an age of waiting , has it really been worth it? Tall, gleaming, cream and black, Zorro III expansion ports galore and that's about it I'm afraid to say.

Where is the monitor? Commodore still don't supply any Amigas with a monitor, and as there was serious shortage of them over Christmas, a £2000 Amiga without a monitor is not a lot of use to anyone except as a games machine, and I thought Commodore were trying to get away from that tarnished impression.

Where is the faster processor? Commodore still supply the A4000T with a measly 68040 25Mhz processor. With only 6Mb as standard a processor of this type will be slowed down considerably.

But what about the cost? So why is it so expensive now? The new A4000T with no hard drive retails at a massive £1,949 RRP. This puts is out of the home market league and into the semi-pro and professional market. I don't really want to get into the Amiga-V-PC debate (Good – Ed) but Commodore do not really help themselves in this field. They say that they want to promote the Amiga as a computer for home and business, but who will buy an Amiga when you can get a Pentium PD equivalent for £1500 less?

S A Little
Swindon



ZX Spectrum games such as Atic Atac are now available as part of a PD emulator. Are they legal?

The A4000T is obviously aimed at the graphics workstation market. When you buy a Silicon Graphics machine you are offered a wide variety of options in terms of disk space, memory capacity, tartan patterned disk drive, and so on. Commodore's obvious intention is that dealers will put together packages for individual customers. In these terms, leaving the machine without a disk makes sense, as the dealers can add exactly what the customer requires. For this sort of price, you aren't going to be buying one off the shelf.

However, the A4000T is too expensive. This isn't just a problem for this machine, but for all of the high-end Amigas. The falling cost of PCs has meant that the A4000 does not seem to offer good value for money. We all know that Workbench is far superior to Windows (or Windoze as many people call it), but how do you convince somebody who has used PCs that Amigas are worth the extra?

GODDAM GAMES

I am a games player and I want to be a serious computer user. The problem is that I am not good at programs and utilities so I need some serious help. Where can I find how to use the Amiga to its full potential (apart from this magazine)?

How do you think I should start to know and use the programs better? I also want to make my Amiga (A600) a more butch machine haw do you suppose (sic) I should do this?

Jonathan Shewring
Coleshill

The first thing you need to do is keep buying *Amiga Shopper*. Secondly, check out the many Amiga books available, many of which are aimed at beginners such as yourself. However, no amount of reading is going to help you if you aren't afraid to experiment. Get hold of some PD programs or magazine coverdisks and play around with them. As long as you keep backup copies of important disks, there is nothing you can do which will damage the machine.

Expanding an A600 is a more difficult matter. Although there is an expansion slot on the bottom of the machine, this is only big enough for a RAM expansion card, so you won't be able to fit an accelerator to your machine. You should seriously think about adding a hard drive and some extra RAM if you are planning to do things such as DTP or ray tracing. Even then, this machine is not going to be particularly fast, so if you are really serious you should think about upgrading to a faster machine such as an A1200 or an A4000/030.

Finally, a decent spelling checker would be handy. This will not only point out words that you have not spelt correctly, but also bring out any tryping errors in your letters.

ELECTRONIC EMISSIONS

Amiga Shopper can now accept letters by E-Mail at the following addresses:

Internet
Letters@amshop.demon.co.uk
Fidonet
2:2502/129.1
MercuryNet
240:370/0.50

EMULATION ENDINGS

While browsing through the Public Domain advertisements in your magazine, I noticed that many of their emulators (especially those compatible with the elderly 8 bit machines (Such as the ZX Spectrum – Ed)) include free software on the disk as well. In some cases this is complete games.

Is this legal? I'd have thought that organisations such as FAST would have cracked down on this long ago, or is it just that they feel downgrading the Amiga to play 8-bit games from machines which are long past their prime doesn't matter?

Stuart N Hardy
Sheffield

Spookily enough, we received a Spectrum Emulator disk from a PD company this month which contained several games, including *3D Death Chase*, *Atic Atac* and *Galaxians*. Although these games are old, they are still copyrighted, and the people who hold the copyright have every right to sue the people who are distributing the disks. Having said that, are they likely to bother? After all, the games are several years old and they aren't losing any money from people copying them.

To clarify the situation, I spoke to Simon Alty From Ocean, whose game *Eskimo Eddie* was one of those included on this disk. He said "*Eskimo Eddie* is a copyrighted property of Ocean Software Ltd. Offering a Spectrum emulator together with a copy of the game in question is clearly a breach of copyright – in other words it is piracy. Ocean abhors piracy in any form and therefore cannot condone such emulations."

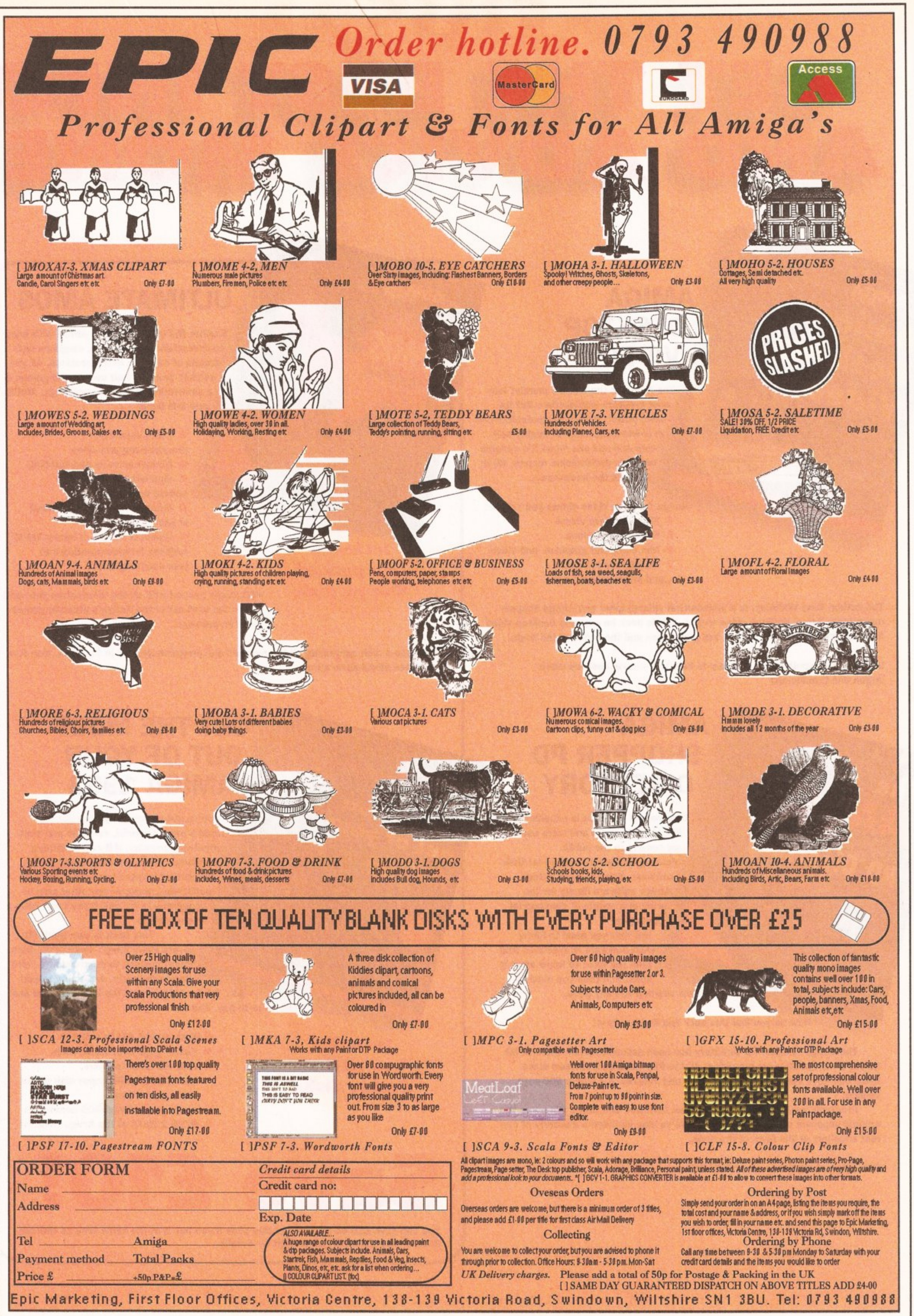
Andy Braybrook, programmer of Classic games such as *Uridium*, says "I don't think they should be distributing this stuff without permission. If it serves to get people interested in finding more up-to-date games by us, then at least it helps. It's interesting that people are looking at these games and I'd be intrigued to see whether people are still really playing them."

ASSEMBLER AGONY

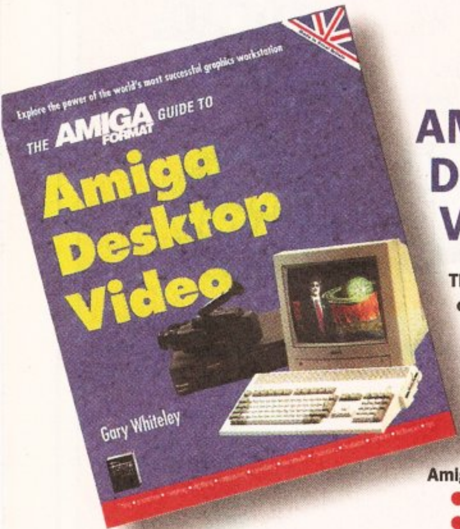
You don't need plenty of interest to publish a monthly 16-page assembler tutorial. It is much more simple; if you *don't* publish it, I will take a trip to your office and clog up all the toilets.

Pieter Frenssen
Belgium

Alright then! We get the message. You can have a tutorial, although it won't be 16 pages. We only give 16 pages to really important things such as what a great bloke I am. Next month – I promise! Now leave me alone! I want to go to the toilet! AS


EPIC
Order hotline. 0793 490988
VISA
MasterCard
EUROCARD
Access
Professional Clipart & Fonts for All Amiga's
[ ]MOXA7-3. XMAS CLIPART
Large amount of Chistmas art
Candle, Carol Singers etc etc
Only £7-00
[ ]MOME 4-2, MEN
Numerous male pictures
Plumbers, Firemen, Police etc etc
Only £4-00
[ ]MOBO 10-5. EYE CATCHERS
Over Sixty images, Including: Flashest Banners, Borders &Eye catchers
Only £10-00
[ ]MOHA 3-1. HALLOWEEN
Spooky! Witches, Ghosts, Skeletons, and other creepy people…
Only £3-00
[ ]MOHO 5-2. HOUSES
Cottages, Semi detached etc.
All very high quality
Only £5-00
[ ]MOWES 5-2. WEDDINGS
Large amount of Wedding art,
Includes, Brides, Grooms, Cakes etc
Only £5-00
[ ]MOWE 4-2. WOMEN
High quality ladies, over 30 in all.
Holidaying, Working, Resting etc
Only £4-00
[ ]MOTE 5-2, TEDDY BEARS
Large collection of Teddy Bears,
Teddy's pointing, running, sitting etc
£5-00
[ ]MOVE 7-3. VEHICLES
Hundreds of Vehicles.
Including Planes, Cars, etc
Only £7-00
PRICES SLASHED
[ ]MOSA 5-2. SALETIME
SALE! 30% OFF, 1/2 PRICE
Liquidation, FREE Credit etc
Only £5-00
[ ]MOAN 9-4. ANIMALS
Hundreds of Animal images
Dogs, cats, Mammals, birds etc
Only £9-00
[ ]MOKI 4-2. KIDS
High quality pictures of children playing, crying, running, standing etc etc
Only £4-00
[ ]MOOF 5-2. OFFICE & BUSINESS
Pens, computers, paper, stamps
People working, telephones etc etc
Only £5-00
[ ]MOSE 3-1. SEA LIFE
Loads of fish, sea weed, seagulls, fishermen, boats, beaches etc
Only £3-00
[ ]MOFL 4-2. FLORAL
Large amount of Floral Images
Only £4-00
HOLY BIBLE
SEPTEMBER
[ ]MORE 6-3. RELIGIOUS
Hundreds of religious pictures
Churches, Bibles, Choirs, families etc
Only £6-00
[ ]MOBA 3-1. BABIES
Very cute! Lots of different babies doing baby things.
Only £3-00
[ ]MOCA 3-1. CATS
Various cat pictures
Only £3-00
[ ]MOWA 6-2. WACKY & COMICAL
Numerous comical images.
Cartoon clips, funny cat & dog pics
Only £6-00
[ ]MODE 3-1. DECORATIVE
Hmmm lovely
Includes all 12 months of the year
Only £3-00
[ ]MOSP 7-3.SPORTS & OLYMPICS
Various Sporting events etc
Hockey, Boxing, Running, Cycling.
Only £7-00
[ ]MOF0 7-3. FOOD & DRINK
Hundreds of food & drink pictures
includes, Wines, meals, desserts
Only £7-00
[ ]MODO 3-1. DOGS
High quality dog images
includes Bull dog, Hounds, etc
Only £3-00
[ ]MOSC 5-2. SCHOOL
Schools books, kids,
Studying, friends, playing, etc
Only £5-00
[ ]MOAN 10-4. ANIMALS
Hundreds of Miscellaneous animals.
Including Birds, Artic, Bears, Farm etc
Only £10-00
FREE BOX OF TEN QUALITY BLANK DISKS WITH EVERY PURCHASE OVER £25
Over 25 High quality Scenery images for use within any Scala. Give your Scala Productions that very professional finish
Only £12-00
[ ]SCA 12-3. Professional Scala Scenes
Images can also be imported into DPaint 4
A three disk collection of Kiddies clipart, cartoons, animals and comical pictures included, all can be coloured in
Only £7-00
[ ]MKA 7-3, Kids clipart
Works with any Paint or DTP Package
Over 60 high quality images for use within Pagesetter 2 or 3. Subjects include Cars, Animals, Computers etc
Only £3-00
[ ]MPC 3-1. Pagesetter Art
Only compatible with Pagesetter
This collection of fantastic quality mono images contains well over 100 in total, subjects include: Cars, people, banners, Xmas, Food, Animals etc,etc
Only £15-00
[ ]GFX 15-10. Professional Art
Works with any Paint or DTP Package
STAR BURST
There's over 100 top quality Pagestream fonts featured on ten disks, all easily installable into Pagestream.
Only £17-00
[ ]PSF 17-10. Pagestream FONTS
THIS FONT IS A BIT BASIC
THIS IS ASWELL
THIS ISN'T TO BAD
THIS IS EASY TO READ
CURVY DON'T YOU THINK
Over 60 compugraphic fonts for use in Wordworth. Every font will give you a very professional quality print out. From size 3 to as large as you like
Only £7-00
[ ]PSF 7-3. Wordworth Fonts
MeatLoaf
Well over 100 Amiga bitmap fonts for use in Scala, Penpal, Deluxe-Paint etc.
From 7 point up to 90 point in size.
Complete with easy to use font editor.
Only £9-00
[ ]SCA 9-3. Scala Fonts & Editor
The most comprehensive set of professional colour fonts available. Well over 200 in all. For use in any Paint package.
Only £15-00
[ ]CLF 15-8. Colour Clip Fonts
ORDER FORM
Name
Address
Tel
Amiga
Payment method
Total Packs
Price £
+50p P&P=£
Credit card details
Credit card no:
Exp. Date
ALSO AVAILABLE…
A huge range of colour clipart for use in all leading paint & dtp packages. Subjects include. Animals, Cars, Startrek, Fish, Mammals, Reptiles, Food & Veg, Insects, Plants, Dinos, etc, etc. ask for a list when ordering…
[] COLOUR CLIPART LIST. (foc)
All clipart images are mono, ie: 2 colours and so will work with any package that supports this format, ie: Deluxe paint series, Photon paint series, Pro-Page, Pagestream, Page setter, The Desk top publisher, Scala, Adorage, Brilliance, Personal paint, unless stated. All of these advertised images are of very high quality and add a professional look to your documents.. *[ ] GCV 1-1. GRAPHICS CONVERTER is available at £1-00 to allow to convert these images into other formats.
Oveseas Orders
Overseas orders are welcome, but there is a minimum order of 3 titles, and please add £1-00 per title for first class Air Mail Delivery
Collecting
You are welcome to collect your order, but you are advised to phone it through prior to collection. Office Hours: 9-30am - 5-30pm. Mon-Sat
Ordering by Post
Simply send your order in on an A4 page, listing the items you require, the total cost and your name & address, or if you wish simply mark off the items you wish to order, fill in your name etc. and send this page to Epic Marketing, 1st floor offices, Victoria Centre, 138-139 Victoria Rd, Swindon, Wiltshire.
Ordering by Phone
Call any time between 9-30 & 5-30pm Monday to Saturday with your credit card details and the items you would like to order
UK Delivery charges. Please add a total of 50p for Postage & Packing in the UK
[ ] SAME DAY GUARANTEED DISPATCH ON ABOVE TITLES ADD £4-00
Epic Marketing, First Floor Offices, Victoria Centre, 138-139 Victoria Road, Swindown, Wiltshire SN1 3BU. Tel: 0793 490988

GET THE BEST INFO[RMATION] AND ADVICE MONE[Y...]



AMIGA DESKTOP VIDEO

The Amiga is the world's premier low-cost graphics workstation. But its basic power, built-in expandability and ever-widening range of quality software and add-ons mean it's capable of highly professional results. All it takes is the know-how...

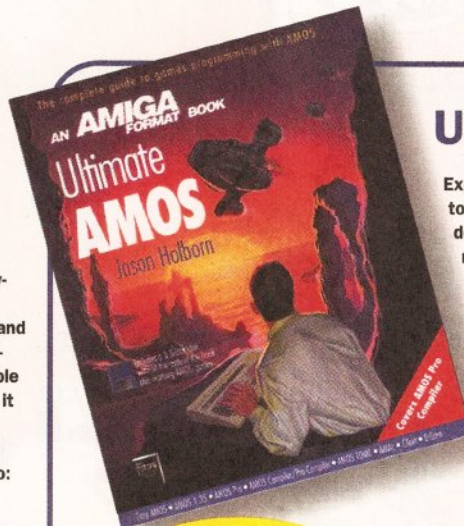
Amiga Desktop Video shows you how to:

- Title your own videos
- Record animations
- Mix computer graphics and video
- Manipulate images

...and much, much more

The author, Gary Whiteley, is a professional videographer and Amiga Shopper magazine's 'tame' desktop video expert. In this book he explains desktop video from the ground up – the theory, the techniques and the tricks of the trade.

Includes a comprehensive glossary to help you unravel desktop video jargon and terminology



ULTIMATE AMOS

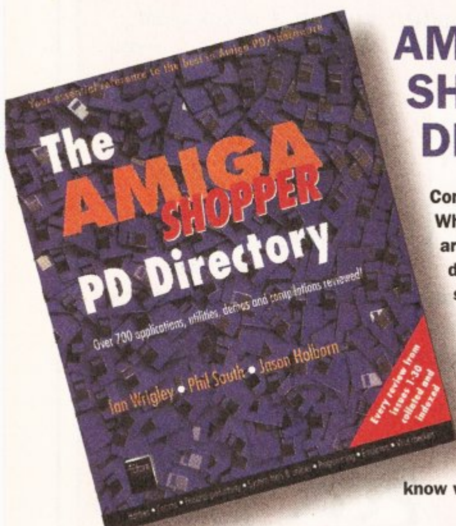
Explore the full potential of AMOS with easy-to-understand descriptions, diagrams and dozens of example AMOS routines. All you need to produce your own Amiga games is a smattering of BASIC knowledge, AMOS - and this book!

- Learn essential programming principles
- Master screens and scrolling
- Find out how to handle sprites and 'bobs'
- Incorporate sound and music in your games
- Discover dozens of handy AMOS routines for incorporating into your own programs

Includes one packed floppy disk

400 pages packed with all the information you need to get the best out of the Amiga's ultimate games creation package!

Includes a disk containing all the routines and programs printed in the book, plus four skeleton stand-alone games.



AMIGA SHOPPER PD DIRECTORY

Commercial software is expensive. Which is why more and more users are turning to the public domain/shareware market for their software. You can build a huge Amiga software library for the price of a couple of commercial packages!

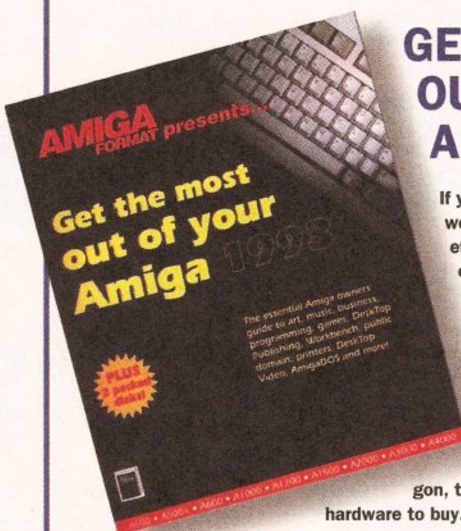
But first you need to know what software is available. And then you need to know what it does. And then you need to know whether it's any good.

How do you find this out? You find out here!

The Amiga Shopper PD Directory has been assembled from the first 30 issues of Amiga Shopper magazine. All the PD/shareware reviews since issue one have been collated, compiled and indexed in a single 500-page volume.

Programs are divided into categories, reviewed and rated. We name the original suppliers of the programs and we've also included a directory of current suppliers at the back of the book.

Get this book and save yourself £££s!



GET THE MOST OUT OF YOUR AMIGA 1993

If you've got an Amiga, you've got the world's most powerful, versatile and cost-effective computer. If it can be done a computer, it can be done on the Amiga. But getting started in comms, desktop publishing, music or any other area of computing is difficult if you don't have a friendly guide.

This book is your guide! It covers every Amiga application, from desktop video to programming, from games to music, explaining the jargon, the techniques and the best software and hardware to buy. And...

Includes two packed floppy disks

- Discover the Amiga's history
- Get to grips with Workbench.
- Find out about printers, hard disks, RAM, floppy disk drives and accelerators
- Learn useful AmigaDOS commands
- PLUS 2 disks of top Amiga utilities!

Save £10!

You can save £10 on the price of this book if you buy it at the same time as Ultimate AMOS – see the form on the right for details.

MATION CAN BUY!

Future books are written by the very same people who write your favourite Amiga magazines. So you know you can count on the very best, from our money saving PD Catalogue or our guide to C Programming. The finest Amiga books you can buy.



Includes four packed floppy disks

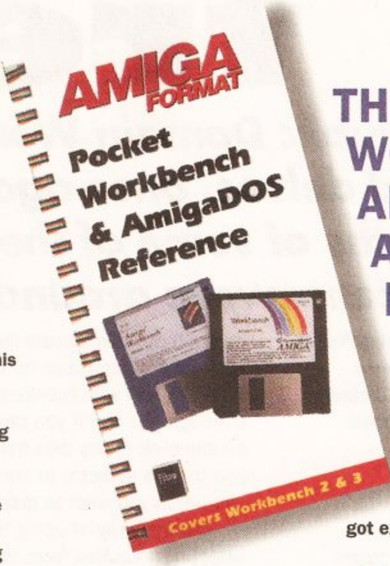
COMPLETE AMIGA C

Here, in one single package, is everything you need to start programming in C. All the information you need, all the explanations, all the jargon-busting, all the documentation AND all the software!

Getting started in C programming has never been easier than this!

- **Learn the basics of C programming with this 300-page book by Cliff Ramshaw, editor of Amiga Shopper magazine**
- **Write and compile your own programs using the full version of top shareware C compiler DICE, provided with the book**
- **Explore all the compiler's features with the on-disk documentation**
- **Exploit your Amiga's special features using the version 1.3 and version 2 Commodore 'includes'and 'libraries' also provided (these are compatible with version 3 machines but will not provide version 3 features)**

Everything you need to get started in C programming on the Amiga is right here at a fraction of the price of a commercial package



THE POCKET WORKBENCH AND AMIGADOS REFERENCE

How do you copy files? How do you format floppy disks? How do you move things from one folder to another?

If you've just got your Amiga, Workbench and AmigaDOS can be confusing – unless you've got expert help on hand:

- **Understand Workbench menu options**
- **Customise Workbench for your needs**
- **Make the most of the supplied Tools, Utilities and commodities**

PLUS For more advanced users there's a full AmigaDOS 2 & 3 command reference, listing all the commands in alphabetical order and quoting function, syntax and examples. Learn how to really drive your Amiga!

This pocket-sized book contains the essential AmigaDOS reference section from "Get The Most Out of Your Amiga" in a ringbound, handy edition - as well as much, much more.

Future Books Priority Order Form

Your name ____________________

Your address ____________________

____

Postcode ____________________

Your signature ____________________

Please send me (tick as appropriate):

☐ Get the Most out of your Amiga 1993	FLB009A	£19.95*
* Save £10! You can buy this book at the reduced price of £9.95 if you order it in conjunction with Ultimate AMOS (below)		
☐ Ultimate AMOS	FLB025A	£19.95
☐ Pocket Workbench & AmigaDOS Reference	FLB017A	£9.95
☐ Complete Amiga C	FLB106A	£24.95
☐ Amiga Desktop Video	FLB084A	£19.95
☐ Amiga Shopper PD Directory	FLB114A	£14.95

All prices include postage and packing

Amount enclosed £ (Make cheques payable to Future Publishing Ltd.)

Method of payment (please tick one): VISA ☐ ACCESS ☐ CHEQUE ☐ POSTAL ORDER ☐

CARD NUMBER ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ Expiry date: ☐☐☐☐

Tick if you do not wish to receive direct mail from other companies ☐

Or call our 0225 822511 credit card hotline

Now send this form and your payment to: **Future Book Orders, Future Publishing Ltd, Freepost (BS4900), Somerton, Somerset TA11 7BR**

You will not need a stamp when you post this order and postage and packing are free. There are no extra costs. Please allow 28 days for delivery.

SOFTWARE for free

In this edition of Public Domain World Graeme Sandiford delves, once again, into the delightful depths of some of the best PD, shareware and licenseware around.

This month we have another fine selection of software on test. We also have a new feature to the PD section – we've included a top ten list of PD programs that have been bought from two popular PD libraries.

VIEWTEK 2.1

KEW=II (disk no. V1145)

Without doubt, one the PD utilities I have found most useful over the past couple of years is *Viewtek*. This handy Wb 2+ program can be used to view animation, pictures and even convert picture from GIF or JPEG to the IFF format. It has been written by Thomas Krehbiel who also happens to be the creator of *ImageFX*, one of the top image processing packages for the Amiga. One of the things that most people like about *Viewtek* is the ease with which it can be used. You don't have to fiddle around with hundreds of AmigaDOS options, although you can if you desire – you can just double-click on its icon from Workbench and then use the file selector to choose which picture or animation you wish to display.



Viewtek is an indispensable tool for view graphics files, and with the arrival of 2.1 it's even better.

Another way of using the program is by selecting your files from Workbench by shift-clicking on the image files and then double-clicking on the *Viewtek* icon (holding the shift button on the keyboard and selecting each file in turn). *Viewtek* will then display the first picture – to view each the remaining pictures you can prss your left mouse-button. If you press the right mouse-button, this will abort the loading of all the selected pictures.

So what's new in this latest version? The program now has a configuration file which contains the default display options. Viewtek will also read options that may be contained in the picture icon's Tool Types. To alter the configuration file you need to open a text editor, such as ED, and then uncomment the different options (by removing the semi-colons from in front of the options you wish to use). Once you have saved the configuration file Viewtek will refer to it before displaying an image or picture. However, any options you enter from the CLI will override those contained in the configuration file.

Another useful new feature is the ability to display an animation directly from a disk. This means you can display an animation that is larger than your available free memory. *Viewtek's* documentation explains how this works quite well – there are two tasks: one that is set for reading data from a disk; and another for displaying the data. The two tasks work simultaneously, so you should see a smooth playback. The quality of the playback depends on the size and complexity of the file, the speed of your hard disk, and the buffer size. To achieve the best playback possible, you will need to try out several buffer sizes – a certain amount of patience is needed to get good results.

Viewtek also supports DataTypes. These can be used to add additional image formats to *Viewtek's* repertoire. Another advantage of using DataTypes is that if you come across a DataType for a compressed format, such as JPEG, that is faster than *Viewtek's* own decompression routines, you can specify that *Viewtek* uses the DataType instead.

Viewtek is AGA-compatible in all modes, 24-bit images are displayed and saved in HAM-8. Version 2 now has now extended its support for 24-bit graphics cards. The disk is supplied with different versions of the program to which it will display your files on the corresponding card. The cards supported are: DCTV, IV24, OpalVision, Retina, EGS, Firecracker24 and Picasso.

This really is a fantastic program – we would recommend it to anyone who is into graphics or has any graphic files they want to access quickly and simply.

Program Rating 93%

TOTAL CONCEPTS – STARS AND GALAXIES

NBS (disk CLE 58)

The universe is a big place – no I mean *really* big as in *hugely* big or, in sad 70's talk, humungous. I mean, look how many series of *Star Trek* it's taken to cover just a fraction of our galaxy. Given the vast proportions of the universe, it's hardly surprising that there are loads of interesting things in it. But, how do you find all of the interesting stuff when pretty much all of outer-space is filled with er... space. Well, those jolly nice fellows at Total Concepts are here to give a helping hand with *Total Concepts – Stars and Galaxies*. They are the people who brought us *Total Concepts Dinosaurs, Ecology*, and others. As with the others, *Stars and Galaxies* is a Hyper Book-based multimedia presentation. It contains not only text files, but also images of several stars and galaxies.

Stars and Galaxies contains some very interesting and well-researched information. As this is an educational package it is aimed mainly at a young audience, however there is plenty of material that will be of interest to adults as well. The

BEGINNERS START HERE

The world of Public Domain is great because of its variety. There are all sorts of software categories: shareware, freeware, charityware, and even giftware. So here's a quick list of the categories of programs you are likely to encounter in the PD World.

● PD stands for Public Domain. It's the most widely available kind of software discussed in this section of the magazine. It's actually free; the only condition is that the program and associated files are remain unaltered and are distributed together. A PD library should only charge a nominal fee for disk duplication, postage and the library owner's time and effort.

● Shareware is simple concept, but it relies to some extent on a persons honesty. It gives users the chance to try before they buy. Two versions of a shareware program usually exist. One is a limited version which can be freely distributed, and the other is the full version which is only supplied to users who pay the registration fee.

● Licenseware is more like commercial software in that you have to pay in advance for the program, but the author gets some of this money.

● You may well be wondering: "If I find a useful program in the Public Domain can I make a copy for my best mate?" The answer is usually yes, but you can't distribute registered shareware or licenseware.

● Giftware is where an author asks you to send a gift if you find his or her program useful.

● Charityware is another extremely well-intentioned form of software. The author of a piece of charityware will ask you to make a donation to a charitable organisation.

● Whiskeyware is a new concept pioneered by our own Toby Simpson. If you use the program, you send him a bottle of (decent) whiskey.

PUBLIC PERSONALITY

Interview with Paul Ciepek of NBS

Isle of Wight-based NBS are one the most popular PD libraries around, and one of the oldest too. I quite often get letters or phone calls recommending them because of their prompt and friendly service. Their newspaper/catalogue is professionally produced and has a strong editorial content. The current issue also lists all of the Fred Fish disks from 500 to 975. I had a chat with Paul Ciepek, the founder of NBS.

When did you open your library, and why?

We opened the library in 1987. Originally we were purely selling disks. We slowly started to collect Public Domain, mainly demos, when somebody came up with the idea that "you ought to sell these," so we did. That's when we started off the "Public Domain Earthquake". At that time everyone was selling PD quite expensively, and when we started out we cut our prices to nearly half of most other libraries.

What have you found is the best thing about running a PD library?

Umm, a good question. It's quite difficult – I still quite enjoy seeing new software that is around. It's a bit sad now, because it's nothing like it used to be. One thing I really enjoy is seeing good software authors becoming a success from starting off just writing humble PD and moving on, even if it's just to licenseware. It's nice when someone releases a bit of shareware, it receives a good review, and then the author becomes successful as a result.

What have you found to be the worst part?

Cataloguing probably. There's a couple of thousand disks in the library and then there are all the other collections such as Fred Fish, TBag. The best part of a day a week is taken up looking at new stuff.

What do you think of the current Amiga PD scene?

As far as music and demos are concerned, I think we're just coming to the end of the techno side of things. (Thank Goodness – Graeme). With demos people are still experimenting with the 1200's abilities, and while there are some interesting demos, there is not much originality. The most exciting thing about the current PD scene, if exciting is the right word, are the new utilities that are appearing. The quality of serious PD software has increased tremendously.

What changes would you like to see in the PD world? Is there anything you're unhappy about, or would like to see more of?

What I would like to see more of is originality of ideas. Quite often we have a new word processor sent in, but what's the point of adding it to the library when there are several that already do the job better?

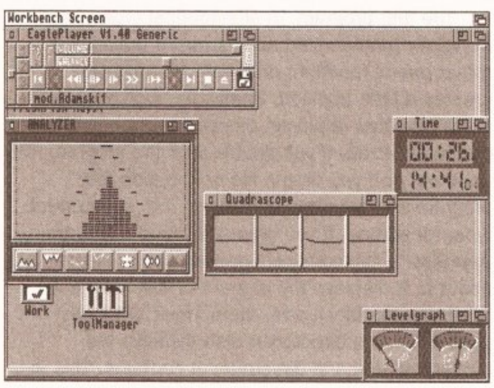
A lot of our readers have said that they have been impressed by your service. Do you have a secret behind your success?

I think it's probably because we are "professional" – it's a full-time occupation. If we get an order in the morning, it goes out the very same day. We also take pride in what goes in the library, and we always have a great team of experts to help if people have problems with our software.

introduction does a splendid job of describing the enormity of the universe and the different stellar bodies that are sprinkled across it. It also explains a little about how stars are formed and other important concepts. The best thing about the explanations is that they nearly always give some everyday references to make difficult concepts easier to understand, and to provide an idea of scale. There is, of course, plenty of information about the Milky Way. It's surprising how much you don't know about your own galaxy!

The style of the text is clear, informative and lively. It's accessible to all age groups yet it remains uncondescending. As this is a multimedia presentation you can skip from certain areas of the text to others. This ability is put to good use when explaining the more complicated topics such as hydrogen "burning". You can then use a hypertext link to get more information; this takes the form of a button on screen, and clicking on it will bring up a window of text.

The programme's excellent collection of images can also be accessed in a similar way. Instead of boxed-out area of text, image buttons are large oval shapes with the instructions "click here for image" printed inside. The images are of an excellent standard for non AGA-machines and obviously required a lot of tracking down. But, it would have been nice if there was an AGA version of the programme, although I suspect this is due to the Hyper Book's limitations. There are some particularly stunning images of nebulas and some good pictures taken by the Hubble telescope.



EaglePlayer has loads of dead-impressive dials and bars – what they are for is beyond me though!

Stars and Galaxies covers an incredible number of topics and is pretty in-depth with its coverage. It explains effectively everything from protostars to black holes. I can only begin to imagine the time and effort that was spent on compiling this wonderful project. As a reflection of this effort, this package is licenseware and costs £5.50 for the three-disk set. As it is a three disk collection, you would benefit from having a external floppy drive or hard disk. However, even if you only have the one drive, you are unlikely to find it too much of an inconvenience as the presentation is well-structured and, if you follow the programme page by page, you'll only need to change disks a couple of times. But, the best bit, for parents, is that the next time your child asks a difficult question about the stars, the Sun, or even the galaxy, you can lock them in a room with an Amiga and be confident that they find an answer without you having to wade through several encyclopedias. Oh yes, one other thing – if you don't ring up and order a copy now, you may die only knowing the tiniest fraction of the universe's secrets. (I think I rather die ignorant myself – Ed).

Program Rating 97%

EAGLEPLAYER V1.40

Roberta Smith DTP (disk no Mus091 A/B)

I must admit I'm not much of a music fan, but I was quite impressed by *Eagleplayer*. It's a shareware module player with a host of useful and interesting tools. The most impressive part of this program is the number of module formats it can play. Excuse the clumsy sentence, but *EaglePlayer's* approach to module formats is modular. You can add different module formats, called players, to a directory called players which is checked each time you attempt to load a module.

Another nice thing about the program is its general slickness and the professional feel. When you load or stop a module, it doesn't just stop dead but lowers the volume gradually. As with many other module players, the program is multi-tasking. *EaglePlayer* uses the Workbench screen to operate, opening several windows for each tool, and there are tools aplenty. There are loads of up-and-downy lines and bar-type things that obviously serve some important and incredibly complicated purpose, which is quite beyond my limited understanding of all things Hi-Fi related. One thing is for certain – they *do* look dead professional. One of the ones I do understand is the Quadroscope; it displays the activity in each of the four sample channels. The Levelgraph is simply a pair of dials that indicate the current volume. The time tool is a nice simple window, it displays the current time and the length of time the module has been playing. The control panel can be used to turn off channels, skip songs or modules, control balance and volume, turn the Amiga's sound filter on or off, or to iconify the program.

There are one or two other options available from the pull-down menus, such as setting play time limit. You can also load and save your configuration and define the iconification mode, but most functions are available from the tool windows. Of course, as this is a shareware program some functions have been disabled. However, the programmers have left enough for you to experiment with the program's functions. The registration fee is only DM20 and, in my opinion, is well worth it.

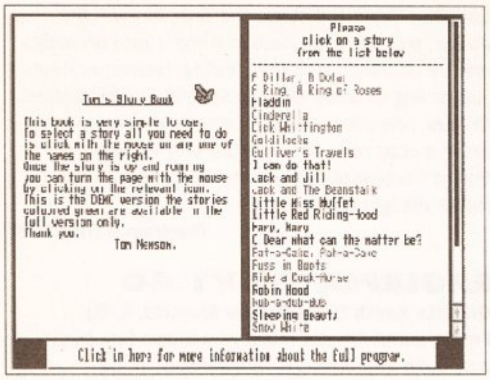
Program Rating 91%

NIGHT SKY 1.8

NBS (disk no. CLE 08)

The universe is a big place… oh rats, I've done that one already! Anyway, *Night Sky* is basically a poor man's *Distant Suns* – it can be used to explore the heavens. You can choose a view of space from any position on Earth during any period of time between 1800 to 2200.

When you run the program it asks for a day, month, year, time, latitude and longitude. It uses this information to calculate your starting viewpoint. Once this has been established you are free to scroll around the screen with your mouse. On your travels you are likely to encounter several dots of varying colours and sizes – these are stars and planets. Clicking on a planet or star, if you can manage it as they make quite a small target, will



Tom's Story Book, created in Hyper Book, contains some of my all-time favourite stories.

bring up some information about it. This includes its name, right ascension, declination and, if it is a star, its magnitude.

I must say I found the whole thing a little tedious. There are very few options and no pictures whatsoever. You can track the planets of the Solar system and zoom in on an area of the screen, but that's pretty much as far as the program's options go. I'd heard a lot about this program, and I must say I was very disappointed, especially after reviewing *Dynamic Skies* in issue 37. It should be okay for serious die-hard star-gazers who don't mind scrolling a limited region at the pace of a snail. In conclusion, don't buy this program buy *Dynanimc Skies*, as it gives *Night Sky's* bottom a good and thorough kicking.

Program Rating 47%

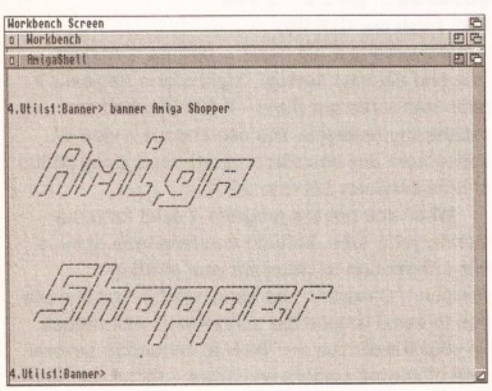
TOM'S STORY BOOK

Roberta Smith DTP (disk no. E053)

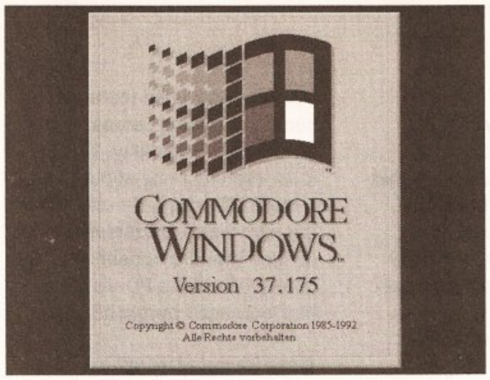
Tom's Story Book is yet another application created in Hyper Book. As the name suggests it is a story book for children. It contains several children's stories, nursery rhymes and a selection of jokes. This is a demo version (the full one will cost five pounds) which has a number of stories missing, including one of my favourites – *Puss in Boots*.

There are some games thrown in as well, although *Noughts and Crosses* could just as easily be played on paper, as there is no computer opponent. Another game that requires two human players is *Four In A Row*. This is just *Noughts and Crosses* on a larger scale – instead of trying to get three noughts or crosses in a row, you try to get four of your counters in a row. The third and final game is *Hangman* – this can be played against the computer; it will choose and then hide a random word which you then try to find.

There are quite a few popular stories such as: *Aladdin*, *Little Red Riding-Hood*, *Robin Hood* and *Sleeping Beauty*. There are also plenty of nursery



Yes, you too can create large text headings from ASCII characters with Banner in Useful Utilities.



Don't panic! Our office Amigas haven't been corrupted by PC-contemptibles; it's just Bootlogo.

rhymes for your children to recite. When you pay your five pounds you'll receive almost double the number of stories and rhymes, as well as jokes – arghh! To read them, all a child has to do is click on the next page button – easy!

The programme is aimed at children of about seven to nine and to a certain degree it should succeed in capturing their attention. I can't help but feel that it would have benefited from a few illustrations. However, all in all, this is quite a good product and is worth a look for most parents.

Program Rating 77%

USEFUL UTILITIES #1

PD Mart

34 Park House, New St, Essington, South Staffordshire, WV11 2BL.

This collection was compiled with the intention of providing PD buyers with even more value for money – rather than paying a couple of pounds for a disk that is only 30 per cent full, this disk is jammed to bursting point with PD utilities. This is the first disk that Martin, of PD Mart, has put together and he is planning to supply more if there is sufficient demand for this one.

The first program, in alphabetical order, is *ApplSizer* (pronounced appy sizer). It provides a rather useful function, once run the program creates a little appicon. Briefly, an appicon is a small icon that is placed on your desktop by a program, usually if you double-click the program will open up, or if you drop a file on the icon the program will open this document, if it is of correct type, for editing. If you drop a file or directory on *ApplSizer's* appicon it will provide some information about it. It displays the amount of disk space it takes up, the block size, the number of blocks used – if it is a directory it also displays the number of files and directories it contains. This is actually quite a useful function. If you are trying to clear some space on a hard disk, you can find out which directories and files would give you more space if they were removed. It's especially useful if you are copying files to floppy disks. This latest version is an update from its shell-only predecessor and should prove invaluable if you don't have a directory utility such as *Directory Opus* or *SID*.

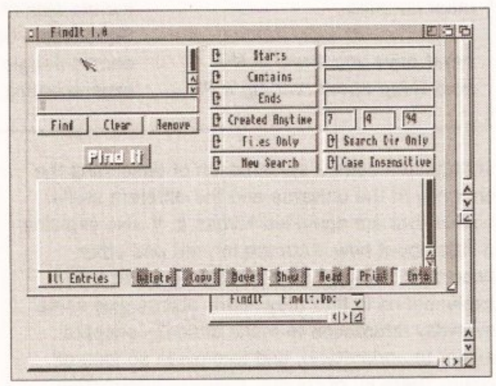
Arestaure is another useful utility to have around; it will attempt to restore any files you may have accidentally deleted. That's what it does, nice and simple, except for the fact I couldn't get the program to recognise my hard drive. It's not as good as *Disksalve*, but it is certainly smaller.

One of the first thing a new serious Amiga-user will want to know how to do is how to create a bootable disk. This is not as easy as you might first think; you have to make a startup-sequence and lots of other fiddly stuff. Well, *AutoDisk_WB2* will save you from most of the hassle – it will create a bootable disk with the bare minimum of files. You can then adjust this disk to your needs, such as adding libraries required by certain programs. Using the program is straightforward; just run Autodisk and insert a blank formatted disk, the program then copies all the necessary files across. How easy can you get, and it still allows bootable disks to keep a degree of mysteriousness.

Have you ever logged on to a BBS or read a text file with a big heading where the letters are made out of several small ASCII characters? I've always wondered how they achieved that effect. I'm still not quite sure how most people do it, but *Banner* is a program that does that automatically from a textstring you have typed in. The program must be executed from shell and requires that you enter a couple of options. There are quite few additional options you can use to alter the appearance of the resulting banner (heading). You can alter the size, style (bold, italic, underlined or normal), the font used to create the banner, the character to be used for each letter and even the orientation of the banner.

Bootlogo is a tiny program that displays a picture when you boot your machine.

DefTool is a program that will appeal to those of you who are addicted to using shell instead of Workbench. It can be used to define a default to an icon. Yes, I know you can do this by selecting the icon while using Workbench and bringing up its info. However, if your aversion to Workbench is such that you start foaming at the mouth at the mere mention of the word, you will be glad that the program can be used from shell. This is of more use to software developers than general users.

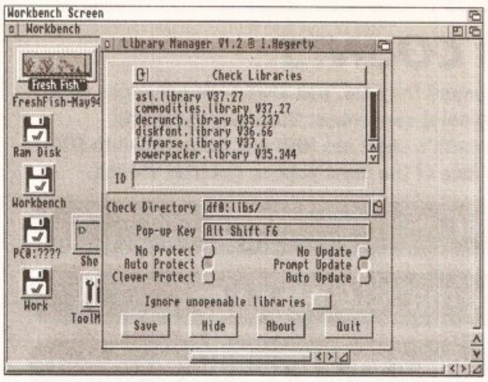


If you often misplace files or programs, then FindIt is definitely the program for you.

One of the highest entries in my personal top ten of annoying computer-related things is receiving disks or files that have been crunched by an obscure packer. Thankfully *DLD* should be able to help you to decrunch these files. It can unpack files that have been crunched by an astounding number of different programs. The reason it can handle so many formats is that it makes use of a rather nifty library that contains every packer routine I've ever heard of and many more.

Exploding Layers has no practical use whatsoever. It simply makes the opening, closing, exploding and imploding of Workbench windows a lot flashier. In fact it just does what the Mac's operating system does; it animates the window so that it appears to grow or shrink. There you are – pretty pointless really.(But it looks good – Ed).

Find It is a program that can be used to find things. No, not money or lost pets – rather it will search your hard disk for files, directories, and even programs. What's more, you can display, execute, or even edit the files you find with the



Library Manager will keep an eye on your libraries and over-zealous installation scripts.

program of your choice. Pretty good, eh?

LibMan is a library manager. It will help you keep track of which libraries you have in your LIBS directory. Not only that, it will check disks as they are inserted to see if they contain any libraries that you don't already have or are a newer version. If it does find a newer version of an existing library or one you do not have, it will ask you if you want it installed and then it will copy them across if you wish. It also has an option that will protect certain libraries from being deleted by over-zealous installation programs.

StarBlank is a relatively simple screen saver. If your mouse and keyboard are left inactive for a while, then *StarBlank* will display an animated starfield. This will help extend your monitor's life-span, as it reduces phosphor burn.

To be honest, I was pleasantly surprised by the number of useful programs that were stuffed on to this disk. What's more, only the two virus checkers were archived (*Virus_Checker V6.34* and *VirusZ II*).

Product Rating 84%

CALORIE COUNTER DIARY

John J Cassar, 31 St. Mungo Ave, Townhead, Glasgow, G4 OPG.

Nowadays it seems virtually impossible to turn on the TV without being bombarded with ads for slimming shakes, cereals and even chocolate bars. It seems that many of us are concerned with our weight. Personally I've always been able to stuff my face with just about anything and not put on weight.(I hate you – Ed). Regular exercise and healthy eating can help you keep healthy. *Calorie Counter Diary* is a shareware program that has been designed to give you a helping hand when it comes to keeping track of your weight and your calory intake.

There are several parts to the program. The Main Editor is where you start off after loading the program. From here you can access any of the other editors, set your preferences, enter user details and enter one of the analysis modes.

The Products Editor contains all the information on the various foods you are likely to eat. There is a substantial list of foodstuffs already available, complete with nutritional information such as calories, protein, carbohydrate, fat and fibre. You can also add your own products to the list – this is quite easy, especially as many stores and food producers often include nutritional information on their labels.

The Confession Editor (great name) is where you enter what you've eaten during the day. To do this you scroll up and down a list of products, select the ones you've scoffed that day and enter the amount. The computer will then work out your nutritional intake for the day.

Once you have entered your intake for the day you can return to the Main Editor. From there you can take a look at the Day-By-Day analysis. This will draw up a chart that displays the recommended daily intake of protein, fat, fibre and carbohydrate in green, and the amounts you have actually consumed in red.

Progress To Date analysis will inform you of how your weight has progressed, how much energy you've consumed and your average calories consumed.

Desired Weight analysis draws up a colourful chart of height and weight. It then marks your present height and weight on the graph. There are five bands of colour that indicate if you are underweight, desirable, slightly overweight, overweight, or worse, obese.

Once a week there is a special day. No, this doesn't mean you can eat as much chocolate as you want, instead this is the day the computer will ask you to weigh yourself and measure your progress.

Although I don't have much use for the program, it is certainly a very good program with plenty of options, a sensible design and is easy to use. This is definitely a well-polished and professional program and it is worth more than the ten pounds it costs. If you would like an evaluation copy send a check for two pounds to John J Cassar at the address above.

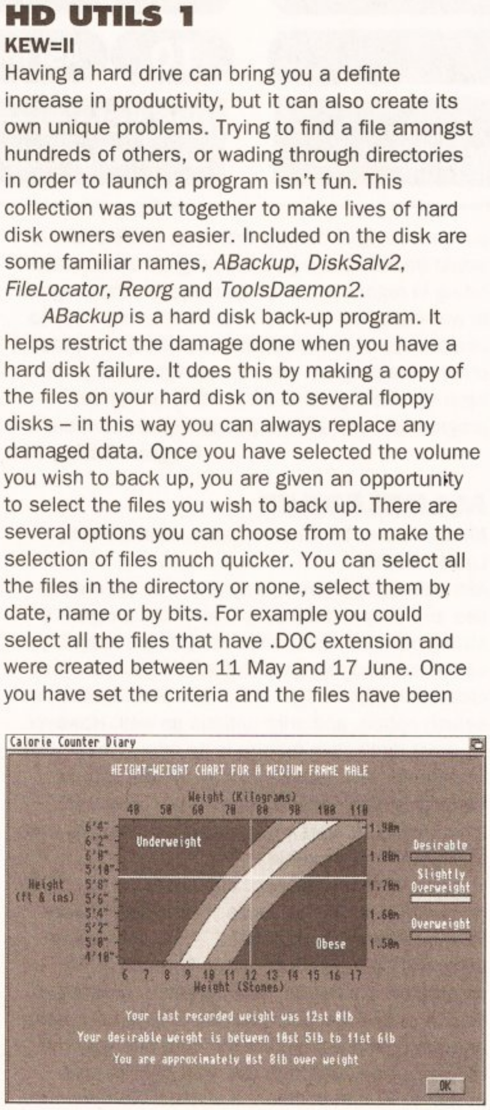
Program Rating 92%

HD UTILS 1

KEW=II

Having a hard drive can bring you a definte increase in productivity, but it can also create its own unique problems. Trying to find a file amongst hundreds of others, or wading through directories in order to launch a program isn't fun. This collection was put together to make lives of hard disk owners even easier. Included on the disk are some familiar names, *ABackup*, *DiskSalv2*, *FileLocator*, *Reorg* and *ToolsDaemon2*.

ABackup is a hard disk back-up program. It helps restrict the damage done when you have a hard disk failure. It does this by making a copy of the files on your hard disk on to several floppy disks – in this way you can always replace any damaged data. Once you have selected the volume you wish to back up, you are given an opportunity to select the files you wish to back up. There are several options you can choose from to make the selection of files much quicker. You can select all the files in the directory or none, select them by date, name or by bits. For example you could select all the files that have .DOC extension and were created between 11 May and 17 June. Once you have set the criteria and the files have been



Calorie Counter Diary is an excellent weight-watching program, but be warned – it's merciless!

selected, you can, if you wish, reverse the selected and non-selected files. You also have the option of compressing files, in order to fit more information on each disk – this will increase the back-up time. You can also save your selections so you can reload them the next time you wish to back up the same drive. A back-up program is something every hard drive owner should have, and this is an excellent one, especially as it is PD!

DiskSalv is another program that is worth having in case of an accident. This is particularly useful if you have not backed up your hard disk, or have damaged information on a floppy disk. As the name suggests, *DiskSalv* will attempt to salvage damaged files, and it's jolly good at it too.

File Locator is a program that can be used to track down files you have misplaced. The program is easy to use – you enter the file name you are looking for, select the drive or drives to be searched, press Start, and away the program goes, looking for as many occurrences of that name it can find. When entering the files name you can also use wildcards. When *File Locator* finds a file that matches your description it will list their paths from their root directory. One thing you cannot do, however, is launch programs or edit the files that are found, as you can with *Find_It*. The program is also slower than *Find_It*, and doesn't seem to like Workbench 3.0 very much at all.

ReOrg is another well-known program – it's a hard disk optimiser. When your hard disk begins to get full it becomes fragmented, and runs out of continuous areas to store data. This can sometimes mean that individual files have to be split up in order to be saved, so you end up with one part of a program or document in one area of the disk and another elsewhere. This results in a slower drive, as the drive head will have to move across a larger area to copy and execute files. *ReOrg* works by defragmenting your drive so that the files occupy continuous areas of the hard drive. However, this can often be an unpredictable process, so you should backup your drive before defragmenting it. *ReOrg* provides a valuable service, and is a worthy addition to any hard disk owner's software collection.

It can be quite a pain in the neck trying to execute a program that is buried under several directories. *ToolsDaemon* is a program that can be used to add any program to your Tools menu on Workbench. There are certain programs that have this ability programmed in, but *ToolsDaemon* will enable the addition of any of your programs to the Toolbar. After doing this, it is a simple matter to execute a program – you just pull the Tool menu until you reach the program you wish to execute, and the program is launched.

While this collection doesn't include any particularly stunning programs, it does provide hard disk owners with enough tools to make the general running of their computer much easier. It also contains programs that you hope you will never have to use, but will be grateful you have them when the worst happens. It is a good, sound collection and you would be well advised to buy it, unless you like living on the edge...

Product Rating 80%

COURSE FORM

Roberta Smith DTP

There is plenty of money to be made in the sport of horse racing – there is also as much to be lost. Some people employ a number of systems to try to ensure that they make as much money as possible. The more successful ones are usually

TOP TEN PD CHART – IT'S THE ONLY CHART THAT COUNTS

This month we have decided to make a change and give you a list of the top ten programs and disks that have been ordered from two PD libraries. The reason for this is to give you the opportunity to see which programs have proved popular with your fellow Amiga-users.

With something as personal as PD programs a single person's opinions, no matter how well-formed they are, can always be enhanced by a general concensus. Our sources for this month's chart are NBS and Roberta Smith DTP – two of the most popular libraries around.

Roberta Smith DTP ☎ 081 455 1626	NBS ☎ 0983 529594
1 COURSE FORM (N/A)	1 TYPING TUTOR (CLU 03) £3.50
2 AUDIOMAGIC 6.0 (MUS 709)	2 ASI Virus Killers V1.7 (PU460)
3 CLIPART (X36)	3 SID V1.06 (U290)
4 FORECASTER (OS 194)	4 Powertext (CLU) £3.50
5 VOYAGE OF COROMARDEL (E038)	5 ASI Fix Disk A1200 (PU351)
6 Disk Manager 4 (BU145)	6 VMorph V2.30 (U772)
7 Assassins Office Helper (N/A)	7 ASI Video Titler Utils (PU457)
8 Graphics Aid Disk (UG024)	8 Spectrum Emulator V1.7 (PU381)
9 Scribble Comms II (N/A)	9 The Geneologist (PU384)
10 Grinder (UG001)	10 ASI Multivision AGA (PU461)
Roberta Smith DTP, 190 Falloden Way, Hampstead Garden Suburb, London NW11 6JE	NBS 1 Chain Lane, Newport, Isle of Wight, PO30 5QA

based on some of probability basis. *Course Form* is a program that tries to improve your winning chances by employing similar methods. It is designed to rate horses on a points basis and tries to assess the most likely winner of a race.

To use the program you will require a newspaper which has a list of all the runners in the day's races. You first select Course from the main menu – this gives you the opportunity to enter the details of the course that is going to be run, such as whether it will be hunt or flat. Once you have done that, you need to go to the Rate section of the program.

The Rate section is where you enter the details of the four favourite horses that will be running, the information should be contained in your paper. You'll need to enter the Name of the horse. Its Form Last Time Out – this informs the program where the horse was placed in its previous race. Weight gives the program the weight of the horse. This will only be asked for in Handicap races. The horse's age also needs to be inputted. Course/Distance informs the program if the horse was a Course Winner or Distance Winner. Once you have entered information for the four favourite horses, you must click on the RATE button.

The rating screen will list the horses and the rating figures it has calculated for each one. Click on PRINT if you wish to print out this information. If a horse receives a rating figure of above 75, it is a strong indication that the horse should do well. However, if it gets a figure below 40 you should avoid placing a bet on that horse.

As I am not a gambling person, and would have great difficulty in convincing the magazine's publisher to give me any money to place a bet, it would be difficult to give the program an accurate rating in regard to reliability. However, the program is well-designed and, as a result it is very easy to use and its documentation is excellent. On these criteria the program rates quite highly, but you'll have to take a gamble on whether or not the program is worth its two pound registration fee.

Program Rating 78%

MARBLEBASE

Mr D J Noble, 53 Thrales Close, Marsh Farm, Luton, Beds.

Marblebase has been designed to be an easy-to-use and simple database. One of the program's strong points is that, when designing a record, you can resize and move around a field you have just created. It also has an automatic sort function, a search option, and print options as well. However, its most distinctive feature is its appearance – its background is a rather fetching marble texture. While this does little to improve the program's functionality, it does make using the program that much more pleasurable.

To create a database, the first thing you must do is add a number of fields. You'll need these later on to enter your data in. The first of these fields will be used as the entry for each of the records once a list has been created. Creating a field is easy – you pull down the create field menu and drag out the shape of the field with your left mouse-button, and then use your right mouse-button to fix it in position. It would have been nice if you were given information about how many characters you will be able to fit into the field at its current size. Before you draw the field you are asked what type of field you want it to be – you can choose from integer, textstring, real or date.

Once you've layed out all of your fields in a record you can then pull down the create record menu. You can then fill in the data for each of the fields, press Esc to go to list mode which lists the records you have created so far. When you are happy with all of your records you can save them for later use and, if you wish, print them out.

The program is by no means feature-packed, but if your database requirements are minimal then *Marblebase* should be enough to help keep track of your collection of rare 70s dance records, or selection of Japanese poems.

Program Rating 73%

WE NEED YOU!

If you have written a program that you feel other Amiga-users might find useful, or entertaining, don't keep it to yourself. Why not send it to us for review?

If you come across a particularly useful PD or shareware program, why not send in a copy of it for us to have a look at? When you do, please be sure to include any documentation and please give us the supplier's name and address as well.

If you run a PD library, you will almost certainly appreciate a bit of free publicity. If you would like to appear in these pages, the quickest way of receiving a mention is to send in some of your latest PD for review.

UK PD HOUSES • UK PD HOUSES

A1200 Only PD. Contact B J Cowdall, 27 Pheasant Way, Cirencester, Glos. GL7 1BJ.

Activity Software, 393 Doncaster Road, Rotherham, South Yorkshire S65 2UF ☎ 0709 377 730 Fax: 0709 838 068.

AGA Exchange, 18 Brownshill, Cromer, Norfolk NR27 0QA. Ads free. Membership fee £9.

Amicom PD, 22 Church View Close, Havercroft, Wakefield WF4 2PH.

AMOS PD, 1 Penmynydd Road, Penlan, Swansea SA5 7EH.

Amigaholics, Kevin Bryan, 49 Coutts House, Charlton Church Lane, Charlton, London SE7 7AS.

Amiganuts United, 1 Daffern Avenue, New Arley, Coventry CV7 8GR.

Amiga Productivity PD Series, 51 Ennors Road, Newquay, Cornwall TR7 1RB. Contact M J Docking.

Anglia PDL, 30 Victoria Street, Felixstowe, Suffolk, IP11 7EW. ☎ 0394 283494.

Anim1 PD, 2 Fatherwell Avenue, West Malling, Kent ME19 6NG.

Armchair PD, 180 Blackton Close, Newton Aycliffe, Co Durham DL5 7EY.

Artman, 40 Northwell Gate, Otley, West Yorkshire LS21 2DN. ☎ 0943 466476.

Asgard PD, 20 Langdale Drive, Flanshaw, Wakefield WF2 9EW. ☎ 0924 363059.

Batty's PD. Contact Ian or Lynn Battison, 7 Denmark Road, Northampton NN1 5QR. ☎ 0604 22456. Life membership £3.99.

Barkin' Mad, 18 Rhyber Avenue, Lanark, Lanarkshire ML11 7AL.

Beats Brothers, 6 Brownings Close, Pennington, Lymington, Hampshire SO41 8GX.

Belshaws PD, 55 Baldertongate, Newark, Notts. NG24 1EU. ☎ 0636 72503.

BG PD, 6 Peter Street, Whitehaven, Cumbria CA28 7QB.

Blitter, 213 Fordfield Road, Sunderland SR4 0HF.

Blitterchips, Cliffe House, Primrose Street, Keighley, BD21 4NN. ☎ 0535 667469.

BTK, 7 Callander Road, Catford, London SE6 2QA. ☎ 081 473 1650.

Bus Stop PD. Contact Lisa or Cheryl, 6 Smiths Avenue, Marsh, Huddersfield HD3 4AN. ☎ 0484 516941.

C and C PD. Contact Chris Wildman, 3a The Cedars, Tilehurst, Reading, Berks. RG3 6JW. ☎ 0734 411131.

Chris's PD, 22 Merryfields Avenue, Hockley, Essex SS5 5AL.

Colwyn PD, Andy Roberts, 17 Gladys Grove, Colwyn Bay, Clwyd LL29 7YB. ☎ 0492 533442.

Compo Software, 36 Priory Rd, Fareham, Hants, PO15 5HT

Computer & Design Services, 24 Blackmoor Croft, Tile Cross, Birmingham B33 0PE. ☎ 021 779 6368

CP PD, (in association with NFA Productions) 3 Dunedin Crescent, Winshill, Burton on Trent, Staffs. DE15 0EJ. ☎ 0283 516736.

Crazy Joe's, 145 Effingham Street, Rotherham, South Yorks, S65 1BL. ☎ 0709 829286.

Cygnostic, New Enterprise Centre Little Heath Ind. Estate, Old Church Road, Coventry CV6 7NB.

Deja Vu, 7 Hollinbrook, Beech Hill, Wigan WN6 7SG. ☎ 0942 495261.

Deltrax PD, 36 Bodelwyddan Ave, Old Colwyn, Clwyd LL29 9NP ☎ 0492 515981

Diskovery PD, 108 The Avenue, Clayton, Bradford, West Yorkshire BD14 6SJ. ☎ 0274 880066.

Essex Computer Systems, 118 Middle Crockerford, Basildon, Essex, SS16 4JA. ☎ 0268 553963.

Eurodisk PD, PO Box 2, Radlett, Herts WD7 8QL.

Express PD, 47 Aberdale Road, West Knighton, Leicester LE2 6GD. ☎ 0533 887061.

Fantasia PD, 40 Bright Street, Gorse Hill, Swindon, Wilts SN2 6BU.

Five Star PD, 48 Nemesia Road, Amington, Camworth B77 4EL. ☎ 0827 68496.

GVB PD, 43 Badger Close, Maidenhead, Berks. SL6 2TE. ☎ 0831 649386.

Haven Computing, 15b Meeching Road,Newhaven East Sussex BN9 9RL. ☎ 0273 513491

Highland PD, David Paulin, 1 Whinpark, Muirtown, Inverness IU3 6NQ. ☎ 0463 242431.

Holmes Brothers Compilations. Contact Craig for monthly compilation disk. 23 Rocester Avenue, Wednesfield, Wolverhampton, West Midlands WV11 3AU. ☎ 0902 733418.

Hornesoft PD. Contact Chris Horne, 23 Stanwell Close, Wincobank, Sheffield S9 1PZ. ☎ 0742 422000.

ICPUG (Independent Commodore Product Users Group), PO Box 1309, London, N3 2UT. ☎ 081 346 0050.

Immediate Arts, 26 Lyndhurst Gardens, Glasgow G20 6QY. ☎ 041 946 5798.

John Leaver, 99 Ibsley Gardens, London SW15 4LX.

Judge Dredd's PD, 1 Nottingham Road, South Croydon, Surrey CR2 6LN.

Kew=II Collection, PO Box 672, South Croydon, Surrey CR2 9YS. ☎ 081 657 1617.

KT's PD. 75 The Drive, Rochford, Essex SS4 1QQ. ☎ 0702 542536.

Langham PD. Contact Richard Payne, 89 Wolverhampton Road, Codsall, Wolverhampton WV8 1PL

Logic PD, 8/5 Glenalmond Court, Sighthill, Edinburgh EH11 4BE.

Magnetic Fields, PO Box 118, Preston, Lancashire PR2 2AW. ☎ 0772 881190

MegaSoft, 78 Bockingham Green, Basildon, Essex SS13 1PF. ☎ 0268 559164

NBS, 1 Chain Lane, Newport, Isle Of Wight, PO30 5QA. ☎ 0983 529594.

Network PD & Shareware Library, Kenmare, Co. Kerry, Eire. ☎ 010 353 64 41603

NFA–PD, R. Monks, PO Box 42, Grimsby, South Humberside DN33 1RY.

NJH Computers, 12 Meesons Mead, Rochford, Essex SS4 1RN. ☎ 0702 546796.

Northern Amiga Users Group, PO Box 151, Darlington DL3 8YT.

Numero Uno, 21 Burstall Hill, Bridlington, N Humberside YO16 5NP. ☎ 0262 671125.

Online PD, 1 The Cloisters, Halsall Lane, Formby, Liverpool L37 3PX ☎ 0704 834 335, BBS 0704 834 583.

Orbital Software. Contact A Flowers, 37 The Orchard, Market Deeping, Peterborough, Cambs. PE8 8JR. ☎ 0778 342064.

Pathfinder PD, 41 Marion Street, Bingley, W Yorks. BD16 4NQ. ☎ 0274 565205.

Penguin Public Domain, PO Box 179, Reading, Berks RG3 3DD.

PD Soft, 1 Bryant Ave, Southend-on-Sea, Essex SS1 2YD. ☎ 0702 466933.

Phil's A1200 Only PD, Phillips Woods, 101 Grove Rd, Gosport, Hants PO12 4JJ.

Premier PD, 45 Fairfield Gardens, Eastwood, Leigh-on-Sea, Essex SS9 5SD. ☎ 0702 520520.

Riverdene PDL, 30a School Road, Tilehurst, Reading, Berkshire RG3 5AN. ☎ 0734 452416.

Roberta Smith DTP, 190 Falloden Way, Hampstead Garden Suburb, London NW11 6JE. ☎ 081 455 1626.

Scribble PD, 2 Hillside Cottages, Burstall, Suffolk IP8 3DY. ☎ 0473 652 588.

SeaSoft Computing, The Business Centre, 1st Floor, 80 Woodlands Avenue, Rustington, W. Sussex BN16 3EY. ☎ 0903 850378.

Sector 16, 160 Hollow Way, Cowley, Oxford. ☎ 0865 774472.

17-Bit Software, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire WF1 1DH. ☎ 0924 366982.

Softville, 35 Market Parade, Havant, Hants PO9 1PY. ☎ 0705 498199.

Software Expressions, Unit 4, 44 Beauley Road, Southville, Bristol BS3 1PY. ☎ 0272 639593.

Startronics, 39 Lambton Rd, Chorlton, Manchester M21 0ZJ. ☎ 061 881 8994.

Tazmania PD, 4 Boultham Avenue, Lincoln LN5 7XZ. ☎ 0522 538706 (after 6 pm).

Telescan Computer Services, Handsworth Road, Blackpool FY5 1SB. ☎ 0253 22296.

Trevan Designs Ltd, PO Box 13, Aldershot, Hants. GU12 6YX. ☎ 0483 725905 (note: modem)

Vally PD, PO Box 15, Peterlee, Co Durham SR8 1NZ. ☎ 091 587 1195.

Virus Free PD, 1F Offices, Victoria Centre, 138-139 Victoria Rd, Swindon, Wiltshire SN1 3BU. ☎ 0793 432 176

Visage Computers PDL. 18 Station Road, Ilkeston, Derbyshire DE7 5LD. ☎ 0602 444501.

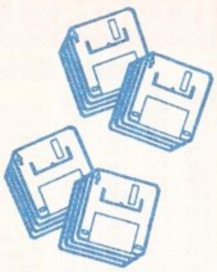
WMC (Worldwide Marketing Concepts), 5 Arthur Terrace, Penisarwaen, Gwynedd, LL55 3PN. ☎ 0286 871815.

Your Choice PD Library, 39 Lambton Road, Chorlton-cum-Hardy, Manchester M21 1ZJ. ☎ 061 881 8994.

● Attention! If you run a PD library not listed here, or want to amend any information, send us the full details.
● Whenever you write to the libraries for a catalogue, include an SAE for its return.
● The libraries named in the reviews were the ones that provided us with the disks. Given that PD can be freely copied, the same programs may be available from several libraries. Search around!

EX-SOFTWARE 3.5" DS/DD DISKS

50	14.99
100	27.99
200	53.99
250	66.99
500	129.99
1000	254.99



DISKS ARE OVER-PRODUCTION RUNS FROM A SOFTWARE HOUSE. THEY CARRY OUR REPLACEMENT OR REFUND GUARANTEE AND COME COMPLETE WITH LABELS.

3.5" SUPERIOR LOCKABLE DISK BOXES

100 Capacity box	3.99*
140 Capacity box	5.99*
200 Capacity drawer	9.99*

* Only if Purchased with Disks



SNAP COMPUTER SUPPLIES LTD

HOTLINE 0703 457111

RIBBONS-POST FREE

Full Mark Brand	2 off	4 off
	PRICE EACH	
Citizen 120D/124D Swift 24	2.75	2.55
Citizen Swift 24 Colour	11.95*	
Panasonic KXP 1080/1123/1124	3.25	3.05
Panasonic KXP 2123	4.95	4.75
Panasonic KXP 2123 Colour	10.95*	
Star LC10/LC20	2.60	2.40
Star LC10-4 Colour	5.90	5.70
Star LC24-10/24-200	2.95	2.75
Star LC24-10 Colour	9.95*	
Star LC200	3.00	2.80
Star LC200 Colour	9.95*	
Star LC24-200 Colour	9.95*	
HP Deskjet 500 Double Refill	9.95*	
Canon BJ10E Double Refill	9.95*	

Minimum order - 2 ribbons, except those marked with an asterisk*

ACCESSORIES-POST FREE

Quickshot Apache Joystick	6.95
Quickshot Python IM Joystick	8.95
Quickshot Maverick IM Joystick	12.95
Mouse Mat	1.99
Mouse Holder	1.99
Roll 1000 3.5 Disk Labels	8.99
Amiga A500/A600/A1200 Cover	3.50
Philips monitor cover	3.99
Star/Citizen/Panasonic 80 col. Printer cover	3.99

All products are subject to availability - All prices include VAT. Please add £3.50 p+p for disks and boxes or £5.99 if goods required overnight. E&OE.

VISA

SNAP COMPUTER SUPPLIES LTD Fax: 0703 457222

Unit 12, The Sidings, Hound Rd, Netley Abbey, Southampton S031 5QA

Access

THE MAGAZINE FOR ALL AMIGA ENTHUSIASTS

JAM

JUST AMIGA MONTHLY



ISSUE 45 SHOWN ABOVE
ISSUE 46 OUT NOW !!!

In depth coverage of the burning Amiga issues

JAM was launched (in 1990) because at that time there was no UK Amiga magazine that properly catered for the serious Amiga user. We were the first to recognise the need for such a magazine (others followed our lead), and we have resolutely stuck to our original policy of providing a 'no-frills' publication that concentrates on accurate information and in-depth articles on everything for the Amiga bar games.

Nothing will ever convince us to compromise those ideals because, unlike traditional magazines, JAM is not driven by profits from selling advertising space, it is driven by the turnover in subscriptions, so the needs of its readers, never mind how specialised those needs may be, are what matter to us most. Instead of dreaming up article ideas based on what is likely to sell more advertising space, our articles are written because they are the kind of articles our subscribers say they want to read.

JAM is edited and produced (totally on the Amiga) by Jeff Walker, who is also a Consultant Editor for the magazine you are reading right now, and who has been for many years a regular contributor to the serious sections of all the UK Amiga magazines. He also writes a lot for JAM. Why not give us a try? We know you won't be disappointed.

STUDIO WILL ENHANCE THE OUTPUT FROM ALMOST ALL AMIGA SOFTWARE

"Studio can make a real difference to the quality of your printouts. It's particularly strong when dealing with colour..." **Amiga Format, October 1993**

"You need this software if you own a printer." **CU Amiga, May 1993**

"The quality really has to be seen to be believed!" **Amiga Mart, May 1993**

ORDER FORM AS **BLOCK CAPITALS PLEASE**

- ☐ **INTRODUCTORY 6 ISSUE TRIAL** .... £10 (Europe £15)
  (3 back issues + 3 issue subscription)
- ☐ **6 ISSUE SUBSCRIPTION** .... £15 (Europe £20)
  (Starting with the current issue)
- ☐ **12 ISSUE SUBSCRIPTION** .... £25 (Europe £35)
  (Starting with the current issue)
- ☐ **STUDIO PRINTER SOFTWARE** £49.95
  (WB2+, supports all DeskJets, LaserJets and compatibles, Ricoh LP1200, and most Epson compatible 24/48-pins)
- ☐ **STUDIO LIGHT** .... £15 (Europe £20)
  (WB2+, usable demo of Studio with fixed settings for all DJ and LJ printers, price includes intro 6 issue trial to JAM)
- ☐ **CANON DISK** .... £15 (Europe £20)
  (WB2+, Enhanced drivers for use with Canon bubble jets and lasers, price includes intro 6 issue trial to JAM)
- ☐ **CANONSTUDIO** £15
  (WB2+, registered shareware version of the CanonDisk. More features, more documentation, no crippled bits.)
- ☐ **STAR DISK** .... £15 (Europe £20)
  (Enhanced drivers for Star LC 9/24-pin and SJ-48/144 printers, price includes intro 6 issue trial to JAM)

I enclose a cheque/money order for £ ______________

NAME ______________

ADDRESS ______________

POSTCODE ______________ DATE ___/___/___

Cheques and money orders made out to: **JAM**

Telephone 0895 274449

Send your order to:
Just Amiga Monthly
75 Greatfields Drive
Uxbridge, UB8 3QN

Photocopy or use a separate piece of paper if you don't want to cut your magazine

Product Locator

The complete guide to the best in Amiga hardware, software and PD.

Hardware

500RX
External 8Mb RAM expansion for A500
Rating: 60%
Reviewed: 5
Supplier: WTS Electronics
Price: £199

A1230
14MHz 68030 and 68882 accelerator for the A1200
Rating: 90%
Reviewed: 27
Supplier: Silica
Price: £299

A1500/B2000
Discontinued. Big-box version of A500/A500+
Rating:
Reviewed:
Supplier: Commodore
Price: £S/H500

A2630
25MHz 68030 and FPU accelerator for the A1500(+)
Rating: na
Reviewed: na
Supplier: Commodore
Price: £1200

A3000-16
Discontinued. 608030 16MHz very rare. ECS chip set + 2Mb
Rating: na
Reviewed: na
Supplier: Commodore
Price: £S/H900

A3001
50MHz 68030+FPU accelerator for the A1500(+)
Rating: 90%
Reviewed: 3,5
Supplier: Silica
Price: £1799

A4000-30
Stripped version of A4000
Rating: na
Reviewed: na
Supplier: Commodore
Price: £999

A4000-40
Flagship 25Mhz 68040/AGA Amiga
Rating: na
Reviewed: na
Supplier: Commodore
Price: £2000

A500
Early machine with 512K. Good S/H models rare.
Rating: na
Reviewed: na
Supplier: Commodore
Price: £120+ (used)

A500+
Early V2 machine with 1M RAM. Good value S/H.
Rating: na
Reviewed: na
Supplier: Commodore
Price: £140 (used)

A5000-16
16MHz 68020+FPU accelerator for the A500(+)
Rating: na%
Reviewed: 4
Supplier: ACL
Price: £189.99

A530
40MHz 68030+FPU accelerator for the A500(+)
Rating: 90%
Reviewed: 20
Supplier: Silica
Price: £800

A590
Hard disk/RAM expansion for A500+
Rating: 50%
Reviewed: 1,8,13
Supplier: Commodore
Price: £399

A600
The most basic Amiga currently available new
Rating: 80%
Reviewed: na
Supplier: Commodore
Price: £199

A8802SVHS
SVHS version of A8802 genlock with fade and dissolve
Rating: 50%
Reviewed: 10
Supplier: Marcam
Price: £499

AdRAM 2000
Internal RAM expansion for big box Amigas
Rating: 70%
Reviewed: 8
Supplier: Power Computing
Price: £179

AdSpeed
16MHz 68000 accelerator for the A500(+)
Rating: 70%
Reviewed: 3,5
Supplier: Silica
Price: £173

AEHD
One of the few high-density drives for the Amiga
Rating: 70%
Reviewed: 8
Supplier: Applied Engineering
Price: £140

Alfaoptic
3000dpi true optical mouse
Supplier: Golden Image
Price: £29.95

Alfapower HD
IDE hard drive controller for A500/A500+
Rating: 80%
Reviewed: 33
Supplier: Golden Image
Price: £99.95

Alfascan
Hand-held 400dpi monochrome scanner
Rating: 90%
Reviewed: 14,22
Supplier: Golden Image
Price: £119.95

Alfascan-Plus + OCR
Hand-held 400dpi monochrome scanner
Rating: 90%
Reviewed: 14,22
Supplier: Golden Image
Price: £139.95

Alfascan-800
Hand-held 800dpi monochrome scanner
Supplier: Golden Image
Price: £119.95

AMAS 2
8-bit stereo sound sampler with volume control
Rating: na%
Reviewed: na
Supplier: MicroDeal
Price: £100

Amitek 600
Internal RAM expansion for the A600
Rating: 70%
Reviewed: 24
Supplier: Silica
Price: £45

Aries 2000
Internal RAM expansion for big box Amigas
Rating: 70%
Reviewed: 24
Supplier: Power Computing
Price: £129

Audio Engineer
8-bit stereo sound sampler with adjustable volume
Rating: 90%
Reviewed: 5
Supplier: Silica
Price: £199

Automouse/Joystick switch
Optomechanical mouse
Rating: 95%
Reviewed: 32
Supplier: Golden Image
Price: £12.95

B5000-25
25MHz 68030+FPU accelerator for the A500
Rating: 70%
Reviewed: 3,5
Supplier: ACL
Price: £479

Canon BJ-10ex
Reliable and popular ink-jet. 360DPI, 83 CPS
Rating: 90%
Reviewed: 22
Supplier: Canon
Price: £299

Canon BJ-10sx
Alternative BJ-10 ink-jet. 360DPI, 110 CPS
Rating: 70%
Reviewed: 29
Supplier: Canon
Price: £227

Canon BJ-300
Fast desktop ink-jet. Three fonts, 360DPI, 300 CPS.
Rating: 70%
Reviewed: 22
Supplier: Canon
Price: £495

Canon LBP4 Plus
5PPM, 300 DPI laser. 512K basic RAM
Rating: 70%
Reviewed: 22
Supplier: Canon
Price: £1175

CAX354
Stylistic external floppy disk for all Amigas
Rating: 70%
Reviewed: 0,2,8
Supplier: Cumana
Price: £75

CBM040
40MHz 68040+FPU accelerator for the A3000
Rating: 90%
Reviewed: 20
Supplier: Commodore
Price: £na

Cherry Mk4
High resolution 9' x 12' touch tablet
Rating: na
Reviewed: na
Supplier: Cherry
Price: £450

Citizen 240C
24-pin colour printer. 240 CPS and nine resident fonts
Rating: na
Reviewed: na
Supplier: Citizen
Price: £350

Citizen L24d
24-pin impact printer. 109 CPS
Rating: 70%
Reviewed: 4
Supplier: Citizen
Price: £292

Citizen M200
24-pin impact printer with 240 CPS performance
Rating: na%
Reviewed: na
Supplier: Citizen
Price: £250

Citizen Projet
Impressive ink-jet from Citizen. 360 DPI, 360 CPS
Rating: 70%
Reviewed: 22
Supplier: Citizen
Price: £496

Citizen Swift 24
Well-made 24-pin impact engine. 121 CPS. Five fonts.
Rating: 70%
Reviewed: 4
Supplier: Citizen
Price: £428

Citizen Swift 9
9-pin impact printer .121 CPS. Three fonts. Colour kit avail.
Rating: 90%
Reviewed: 4
Supplier: Citizen
Price: £280

Citizen Swift 90C
Budget priced 9-pin colour with six fonts.
Rating: 70%
Reviewed: 29
Supplier: Citizen
Price: £169

Clarity 16
16-bit stereo sound sampler with adjustable volume
Rating: 70%
Reviewed: 25
Supplier: MicroDeal
Price: £149

ColourPic
Real-time colour video digitiser
Rating: 70%
Reviewed: 2
Supplier: JCL
Price: £399

ColourPic+
Real-time colour video digitiser with animation
Rating: 70%
Reviewed: 22
Supplier: JCL
Price: £699

CSA Mega Miget
33MHz 68030+FPU accelerator for the A500
Rating: 70%
Reviewed: 3,5
Supplier: Omega Projects
Price: £389

CSA Rocket Launcher
50MHz 68030+FPU accelerator for the A1500
Rating: 90%
Reviewed: 20
Supplier: Omega Projects
Price: £549

DataFlyer 2000
Hard drive card for A1500 and above
Rating: 50%
Reviewed: 1
Supplier: Trilogic
Price: £350

DCTV
Pseudo 24-bit video enhancer for all machines. 368x580 pixels
Rating: 70%
Reviewed: 12
Supplier: Silica
Price: £499

Diconix 701
PC ink-jet printer. 300 DPI, 200CPS.
Rating: 50%
Reviewed: 22
Supplier: Kodak
Price: £399

DigiTiger II
Simple colour video capture system
Rating: 70%
Reviewed: 17
Supplier: SA&H
Price: £200

Digiview IV
Simple colour video capture system
Rating: 70%
Reviewed: na
Supplier: Silica
Price: £150

Emplant
Interesting Macintosh emulator for A1500(+)
Rating: 70%
Reviewed: 28
Supplier: Blittersoft
Price: £254.95

Epson Epl4000
6PPM, 300DPI laser engine. 512K basic RAM.
Rating: 70%
Reviewed: 22
Supplier: Epson
Price: £799

Epson LQ400
Budget 24-pin monochrome printer. 121 CPS
Rating: 70%
Reviewed: 4
Supplier: Epson
Price: £269

Epson LX850
Basic 9-pin engine from Epson. Three fonts. 106 CPS
Rating: 50%
Reviewed: 4
Supplier: Epson
Price: £269

Epson SQ870
Epson's answer to the Projet. Eight fonts. 360 CPS, 360 DPI.
Rating: 70%
Reviewed: 22
Supplier: Epson
Price: £659

Epson Stylus 800
Budget ink-jet printer (it shows). 360DPI, 360 CPS.
Rating: 50%
Reviewed: 29
Supplier: Epson
Price: £295

FD Internal 2000
Internal floppy disk for large model Amigas
Rating: 70%
Reviewed: 8
Supplier: Power Computing
Price: £50

Floptical Disk
Removable optical disk for the Amiga
Rating: 90%
Reviewed: 8
Supplier: Digital Micronics
Price: £650

Frame Grabber
Real-time colour video capture system
Rating: na
Reviewed: na
Supplier: Marcam
Price: £599

Fujitsu B100
Little known ink-jet. Three fonts, 300 DPI, 160 CPS.
Rating: 70%
Reviewed: 22
Supplier: Fujitsu
Price: £349

Fujitsu B200
Improved B100. Three fonts, 300 DPI, 180 CPS.
Rating: 50%
Reviewed: 22
Supplier: Fujitsu
Price: £499

Fusion Forty
50MHz 68040+FPU accelerator for the A1500(+)
Rating: na%
Reviewed: na
Supplier: Power Computing
Price: £1999

G-Force
25MHz 68030+FPU for the A1500(+) from GVP
Rating: 70%
Reviewed: 15
Supplier: Silica
Price: £599

G-Force 030
40MHz 68030+FPU for the A1500(+) from GVP
Rating: 70%
Reviewed: 27
Supplier: Silica
Price: £699

G-Force 40
28MHz 68040+FPU for the A1500(+) from GVP
Rating: na%
Reviewed: na
Supplier: Silica
Price: £1999

GeneSys
All-singing genlock from the UK masters
Rating: 70%
Reviewed: 29
Supplier: G2 Systems
Price: £934

GenieScan
Hand-held 400DPI monochrome scanner
Rating: na%
Reviewed: na
Supplier: Datel
Price: £130

Genitizer
Entry level touch tablet. with a 9' x 6' working area
Rating: na%
Reviewed: na
Supplier: Datel
Price: £130

GI Scanner
Hand-held 400DPI monochrome scanner
Rating: 90%
Reviewed: 5
Supplier: Golden Image
Price: £150

Glare Guard
High-priced performance VDU screen filter
Rating: 70%
Reviewed: 26
Supplier: GND Distribution
Price: £86.25

GT6500
Epson's amazing 16.8 million colour 600DPI flat-bed
Rating: 90%
Reviewed: na
Supplier: Power Computing
Price: £1300

GVP DSS
GVP's 8-bit stereo sampler with volume control
Rating: 70%
Reviewed: 3
Supplier: Silica
Price: £60

GVP Impact II+
Ultimate hard disk/RAM expansion for A500(+)
Rating: 90%
Reviewed: 1,8,13
Supplier: Silica
Price: £399

GVP Impact IIHC+8
Excellent hard card for A1500+
Rating: 70%
Reviewed: 8,13
Supplier: Silica
Price: £299

GVP IV24
24-bit video card for A1500(+). 910x576 pixels
Rating: 70%
Reviewed: 12
Supplier: Silica
Price: £1799

GVP Series 2
RAM expansion card from the Amiga masters
Rating: 70%
Reviewed: 24
Supplier: Power Computing
Price: £159

Hama 290
SHVS genlock with fade and dissolve
Rating: 70%
Reviewed: 16
Supplier: Hama PVAC
Price: £749

Harlequin
24-bit video card for A1500(+). 910x576 pixels
Rating: 90%
Reviewed: 11
Supplier: ACS
Price: £1400

ICD Kickback
Keyboard switchable Kickstart ROM sharer
Rating: na
Reviewed: na
Supplier: Silica
Price: £27

Image Master
Professional genlock that does it all
Rating: na
Reviewed: na
Supplier: Neriki
Price: £1150

KCS HD2
High-performance, dual high-density floppy drive
Rating: 90%
Reviewed: 35
Supplier: Bitcon Devices
Price: £199

Kickswitch
British-made keyboard switchable Kickstart ROM sharer
Rating: na
Reviewed: na
Supplier: Omega Projects
Price: £25

M1230XA
50MHz 68030+FPU accelerator for the A1200
Rating: 70%
Reviewed: 29
Supplier: Indy Direct
Price: £299

Megamouse-400
Optomechanical mouse
Rating: 95%
Reviewed: 32
Supplier: Golden Image
Price: £14.95

Megamix Master
From the Vidi Amiga men an 8-bit stereo sound grabber.
Rating: na
Reviewed: na
Supplier: Rombo
Price: £39.95

MicroGen
Budget-priced-general purpose fade/dissolve genlock
Rating: na
Reviewed: na
Supplier: Power Computing
Price: £199

MicroSampler
Budget priced 8-bit stereo sampler
Rating: na
Reviewed: na
Supplier: Datel
Price: £25

MiniGen
The simplest genlock money can buy!
Rating: 90%
Reviewed: 31
Supplier: Lola
Price: £49.95

NEC P20
Reliable 24 pin impact engine. Eight resident fonts. 115 CPS
Rating: 70%
Reviewed: 4
Supplier: NEC
Price: £351

Nexus HC
Internal hard drive card for A1500+
Rating: 70%
Reviewed: 8,13
Supplier: Power Computing
Price: £350

Novia 30i
Internal IDE hard disk for A500(+)
Rating: 50%
Reviewed: 8
Supplier: Power Computing
Price: £399

Octagon-2008
SCSI controller for A2000/3000/4000
Supplier: Golden Image
Price: £129.00

Oki ML380
Tough, office-type printer. 24 pin. 127 CPS. Three resident fonts.
Rating: 70%
Reviewed: 4
Supplier: Oki
Price: £386

Oki OL400
4PPM, 300DPI LED page printer. Reliable, low-cost. 512K RAM.
Rating: 90%
Reviewed: 22
Supplier: Oki
Price: £549

Opal Vision
24-Bit video card for A1500(+). 768x580 pixels
Rating: 90%
Reviewed: 20
Supplier: Silica
Price: £899

Optomouse
High-resolution optical mouse with no ball
Rating: 70%
Reviewed: 28
Supplier: Gasteiner
Price: £14.95

PC Dual Drive
Double-decker external floppy disk for all Amigas
Rating: 70%
Reviewed: 0,8
Supplier: Power Computing
Price: £120

PC501
Internal RAM expansion for the A500
Rating: 70%
Reviewed: 24
Supplier: Power Computing
Price: £30

PC501+
1Mb internal RAM expansion for the A500+
Rating: 90%
Reviewed: 24
Supplier: Power Computing
Price: £36

PC601
Internal RAM expansion for the A600
Rating: 90%
Reviewed: 24
Supplier: Power Computing
Price: £40

PC880B
Popular external floppy disk for all Amigas
Rating: 90%
Reviewed: 8
Supplier: Power Computing
Price: £55

Power 8Mb
External RAM expansion for the A500(+)
Rating: 90%
Reviewed: 24
Supplier: Power Computing
Price: £109

Power Scanner II
Hand-held 400DPI monochrome scanner
Rating: 90%
Reviewed: 14
Supplier: Power Computing
Price: £99

PowerScan Colour
Hand-held 400DPI 256 colour scanner
Rating: 50%
Reviewed: 23
Supplier: Power Computing
Price: £239

Prima
Internal IDE hard disk for A500(+)
Rating: 70%
Reviewed: 8
Supplier: Power Computing
Price: £499

Primera Printer
Photorealisic colour printer
Rating: 93%
Reviewed: 37
Supplier: Power Computing
Price: £649

Pro Agnus
2Mb Agnus CHIP for A500/A2000
Rating: 70%
Reviewed: 24
Supplier: WTS Electronics
Price: £139

Pro RAM 601
Internal 512K RAM expansion for the A600
Rating: 90%
Reviewed: 24
Supplier: WTS Electronics
Price: £38

Pro RAM Plus
Internal 512K RAM expansion for the A500
Rating: 50%
Reviewed: 8
Supplier: Datel
Price: £25

ProGen
Simple genlock
Rating: na%
Reviewed: na
Supplier: Gordon Harwood
Price: £130

RAM Master II
1.5Mb RAM internal expansion for the A500
Rating: na%
Reviewed: na
Supplier: Datel
Price: £100

Real-time Clock
Essential battery-backed up clock system for A1200 machine
Rating: 70%
Reviewed:
Supplier: First Choice
Price: £17.99

Rembrant
24-bit video card for A1500(+). 1024x1024 pixels
Rating: 70%
Reviewed: 13
Supplier: Power Computing
Price: £1499

Rendale 8802FMC
Very simple but effective genlock
Rating: 90%
Reviewed: 31
Supplier: Marcam
Price: £178

Retina
24-bit video card for A1500(+). 2400x 1200 pixels
Rating: 70%
Reviewed: 27
Supplier: ACS
Price: £345

RF542C
Unique 5.25' external floppy drive from Roctec
Rating: 70%
Reviewed: 0,8
Supplier: Silica
Price: £80

Ricoh LP1200
6PPM, 40o DPI laser engine with 2Mb basic RAM.
Rating: 90%
Reviewed: 22
Supplier: Silica
Price: £820

Roc Key
Genlock add-on (chromakey) for the RocGen Plus.
Rating: 70%
Reviewed: 19
Supplier: Silica
Price: £350

RocGen
Simple genlock with fader
Rating: 70%
Reviewed: 8
Supplier: Silica
Price: £117

RocGen Plus
Simple genlock with fade and dissolve. Noisy
Rating: 70%
Reviewed: 10
Supplier: Silica
Price: £199

Roclite
Sexy little slimline floppy drive for all Amigas
Rating: 90%
Reviewed: 8
Supplier: Silica
Price: £60

Sample Studio 2
8-bit stereo sampler
Rating: na%
Reviewed: na
Supplier: Datel
Price: £70

Sharp JX100
Hand-held 200DPI colour scanner
Rating: na
Reviewed: na
Supplier: Silica
Price: £695

Sharp JX300
300DPI colour flat-bed scanner
Rating: na
Reviewed: na
Supplier: Silica
Price: £3600

Sound Enhancer
Bass and treble boost control for Amiga sound.
Rating: na
Reviewed: na
Supplier: Omega Projects
Price: £40

Sound Trap 3
Tiny, if basic, monophonic 8-bit sound sampler
Rating: 70%
Reviewed: 3
Supplier: Omega Projects
Price: £30

Star Laser 4
4PPM, 300 DPI laser. 1M basic RAM.
Rating: 70%
Reviewed: 22
Supplier: Star
Price: £1173

Star LC200-24
Colour/monochrome impact. Four resident fonts. 91 CPS
Rating: 70%
Reviewed: 4
Supplier: Star
Price: £304

Stereo Master
Budget-priced 8-bit stereo sound sampler with volume control
Rating: 70%
Reviewed: 11
Supplier: HiSoft
Price: £40

Stereo sampler 2
8-bit stereo sound sampler with volume control
Rating: na
Reviewed: na
Supplier: Trilogic
Price: £40

Supra 500XP
External hard drive/RAM expansion for A500(+)
Rating: 70%
Reviewed: 1,8,13
Supplier: WTS Electronics
Price: £489

SyQuest Tape Backup
SCSI tape streamer for Amigas with SCSI port
Rating: 50%
Reviewed: 8
Supplier: Omega Projects
Price: £600

Toshiba CD-ROM
CD-ROM for Amigas with SCSI ports
Rating: 70%
Reviewed: 27
Supplier: Alamthera System
Price: £499

V-Lab
Real-time colour video capture system
Rating: 70%
Reviewed: 17
Supplier: ACS
Price: £300

S-VHS VideoCenter
The original, low-end VideoCenter – the VC1.
Supplier: G2 Systems
Price: £581.63

VideoCenter 2
Well-endowed genlock from the British SVHS masters
Rating: na
Reviewed: na
Supplier: G2 Systems
Price: £1170

VideoCenter 3
High-performance suite from the masters
Rating: 70%
Reviewed: 7
Supplier: G2 Systems
Price: £1999.99

Video Master
Budget real-time video capture system with colour facility
Rating: 70%
Reviewed: 25
Supplier: MicroDeal
Price: £69.95

Videocomp G100
High cost, high performance genlock system
Rating: 90%
Reviewed: 3
Supplier: Silica
Price: £1800

VideoDigitiser
Real-time video capture system with colour facility
Rating: na
Reviewed: na
Supplier: Datel
Price: £80

VideoMaster VM 2
Expensive, high-performance SHVS genlock
Rating: 50%
Reviewed: 1
Supplier: Power Computing
Price: £799

Videon
Colour video capture system.
Rating: na
Reviewed: na
Supplier: Power Computing
Price: £200

Vidi Amiga 12 AGA
Popular and powerful budget priced video digitiser
Rating: 90%
Reviewed: 22
Supplier: Rombo
Price: £99.95

Vidi Amiga 12RT AGA
Real-time 12-bit video digitiser
Rating: 80%
Reviewed: 36
Supplier: Rombo
Price: £199.99

Vidi Amiga 24RT AGA
Real-time 24-bit video digitiser
Rating: 80%
Reviewed: 36
Supplier: Rombo
Price: £299.95

VXL30
25MHz 68030+FPU internal accelerator for the A500
Rating: na
Reviewed: na
Supplier: Indi Direct
Price: £409

WordSync 2000
Hard disk card for A1500+
Rating: 70%
Reviewed: 1,13
Supplier: WTS Electronics
Price: £450

Software

AccuTrans 3D
Converts 3D objects
Rating: 70%
Reviewed: 33
Supplier: Micromouse
Price: £39.29

ADPTools Professional
Remote control for ASDG's Art Department Pro
Rating: 70%
Reviewed: 35
Supplier: White Night
Price: £125

Advantage
One of the best all-round Amiga spreadsheets
Rating: 70%
Reviewed: 1,9
Supplier: Silica
Price: £100

Aladdin 4D
Amazing ray-traced rendering package
Rating: 93
Reviewed: 38
Supplier: Hobbyte
Price: £213

Alternative Scroller
Video titling system
Rating: na
Reviewed: na
Supplier: Alternative Image
Price: £50

Ami-Back
Very popular hard disk backup system
Rating: 70%
Reviewed: 29
Supplier: Omega Projects
Price: £69.99

AmiBase 4
Simple flat-file database
Rating: 70%
Reviewed: 36
Supplier: One Vision Software
Price: £15

AmigaVision
Hypercard-like engine
Rating: na
Reviewed: na
Supplier: Commodore
Price: £80

AMOS
BASIC programming language with many extensions
Rating: 90%
Reviewed: 3,9
Supplier: Europress
Price: £50

AMOS 3D
3d-extension for AMOS BASIC
Rating: 90%
Reviewed: 5,7
Supplier: Europress
Price: £30

AMOS Compiler
Compiler for AMOS BASIC
Rating: 70%
Reviewed: 5,9
Supplier: Europress
Price: £30

AMOS Pro Compiler
Compiler extension for AMOS BASIC
Rating: 70%
Reviewed: 30
Supplier: Europress
Price: £34.95

AMOS Professional
Bigger, more powerful version of AMOS
Rating: 90%
Reviewed: 20
Supplier: Europress
Price: £69.95

AntiA
Font enhancement utility
Rating: 70%
Reviewed: 8
Supplier: Zen
Price: £40

Art Department Professional
Latest version of famous image processor
Rating: 84%
Reviewed: 37
Supplier: First Computer Center
Price: £149.95

Art Expression
Structured (object oriented) drawing package
Rating: 70%
Reviewed: 24
Supplier: Silica
Price: £150

Bars and Pipes Pro 2
Very powerful music and multimedia engine
Rating: 80%
Reviewed: 31
Supplier: Meridian
Price: £299.99

Brilliance
The Amiga's first real paint program for years. A classic.
Rating: 95%
Reviewed: 38
Supplier: Meridian
Price: £199.95

Broadcast Titler
Video titling system
Rating: 70%
Reviewed: 2
Supplier: Meridian
Price: £327.27

Caligari 24
Power drawing at a budget price
Rating: 50%
Reviewed: 33
Supplier: Amiga Centre Scotland
Price: £99.95

CanDO 2.51
Hypercard-like applications generator.
Rating: 70%
Reviewed: 33
Supplier: INOVAtronics
Price: £149.95

CMPanion
Patch editor for MIDI
Rating: 70%
Reviewed: 6
Supplier: Gajits
Price: £100

Count and Add
Maths
Rating: 70%
Reviewed: 10
Supplier: Lander Software
Price: £26

Cygnus ED 3
One of the best pure text editors around. A programmer's tool
Rating: 90%
Reviewed: 33
Supplier: Silica
Price: £79.95

Deluxe Paint 4
AGA version available.
Rating: 80%
Reviewed: 10
Supplier: Electronic Arts
Price: £90

Devpac 3
The ultimate assembly language development tool
Rating: 90%
Reviewed: 10,12
Supplier: HiSoft
Price: £70

Directory Opus 4
Super-powerful graphical window on AmigaDOS
Rating: 90%
Reviewed: 28
Supplier: Silica
Price: £64.95

Disney Animation Studio
Animation program from the masters.
Rating: 70%
Reviewed: 1
Supplier: Silica
Price: £80

Easy AMOS
Stripped down version of AMOS BASIC with debugger
Rating: 90%
Reviewed: 12
Supplier: Europress
Price: £35

Elan Performer 2
Video presentation system
Rating: 70%
Reviewed: 11
Supplier: Silica
Price: £180

Essence II
Specially generated textures
Rating: 90%
Reviewed: 32
Supplier: Alternative Image
Price: £100

Final Copy 2
Upgrade to the hugely successful Final Copy
Rating: 70%
Reviewed: 25
Supplier: Gordon Harwood
Price: £79.95

Final Writer
Upgrade to Final Copy 2
Rating: 90%
Reviewed: 33
Supplier: Gordon Harwood
Price: £129.95

Fun School 3
3 R's software with fun graphics
Rating: 90%
Reviewed: 2
Supplier: Europress
Price: £25

Fun School 4
3 R's software with fun graphics
Rating: 90%
Reviewed: 9
Supplier: Europress
Price: £25

GB Route Edit
Editor for users of GB Route Plus
Rating: 80%
Reviewed: 10
Supplier: Complex Computers
Price: £30

GB Route Plus
Automated route planning for UK drivers
Rating: 90%
Reviewed: 10
Supplier: Complex Computers
Price: £80

GigaMem
Virtual memory for big Amigas with bigger hard disks
Rating: 90%
Reviewed: 33
Supplier: Gasteiner
Price: £69.95

HiSoft BASIC
Under-rated version of the BASIC language. Internal compiler
Rating: 70%
Reviewed: 9
Supplier: HiSoft
Price: £50

HiSpeed Pascal
Interesting implementation of Pascal from the language masters
Rating: 70%
Reviewed: 19
Supplier: HiSoft
Price: £100

Home Office 2
Superb integrated office suite from Gold Disk
Rating: 90%
Reviewed: 20
Supplier: Silica
Price: £99.99

Hyperbook
Another Hypercard clone
Rating: 70%
Reviewed: 6
Supplier: Silica
Price: £100

Image Master
Powerful image processing system
Rating: 90%
Reviewed: 18
Supplier: Amiga Centre Scotland
Price: £175

ImageFX
Rival to Art Department
Rating: 70%
Reviewed: 27
Supplier: Silica
Price: £269.95

Imagine 2
Powerful 3D modelling system
Rating: 70%
Reviewed: 14
Supplier: Silica
Price: £270

K-Spread 4
Power spreadsheet with GEM-like interface
Rating: 70%
Reviewed: 9

Supplier: HiSoft
Price: £150

Lattice C v5
The most popular commercial C compiler
Rating: 90%
Reviewed: 3,9
Supplier: HiSoft
Price: £230

Let's Spell
Writing
Rating: 70%
Reviewed: 2
Supplier: Softstuff
Price: £20

M2 Amiga
Amiga implementation of Wirth's Modula-2
Rating: 70%
Reviewed: 7,9
Supplier: Real-Time Associates
Price: £125

MakePath
Automatic path generator add-on for VistaPro
Rating: 70%
Reviewed: 23
Supplier: Meridian
Price: £24.95

Map Master
Image mapping system
Rating: 70%
Reviewed: 14
Supplier: Alternative Image
Price: £54

MediaPoint
High-end presentation authoring system like Scala
Rating: 91%
Reviewed: 37
Supplier: Meridian
Price: £329.99

Micro French
Learn franglais by computer
Rating: 70%
Reviewed: 17
Supplier: LCL
Price: £24

Mini Office 2
Integrated suite of office software
Rating: 60%
Reviewed: 17
Supplier: Europress Software
Price: £59.95

Moviesetter
Basic cartoon animation package from Gold Disk.
Rating: 70%
Reviewed: 14,23
Supplier: Silica
Price: £59.95

Music-X
Popular midi sequencing software
Rating: 70%
Reviewed: na
Supplier: MicroIllusions
Price: £150

Music-X Jnr.
Budget version of Music-X
Rating: 70%
Reviewed: na
Supplier: MicroIllusions
Price: £50

Nexus Backdrops
Backdrops for specialised video use
Rating: 50%
Reviewed: 29
Supplier: Video World
Price: £29.95

Noddy's Big Adventure
13 educational games featuring Noddy. Stage 1 Nat. Cir.
Rating: 90%
Reviewed: 35
Supplier: The Jumping Bean Company
Price: £24.99

OCR
Optical Character Recognition
Rating: 95%
Reviewed: 19
Supplier: Golden Image
Price: £49.95

OctaMed Companion
Tutorial for OctaMED Pro VB5
Rating: 90%
Reviewed: 29
Supplier: SeaSoft Computing
Price: £16.99

OctaMed Professional V5
Very powerful and hugely popular music/midi editor
Rating: 90%
Reviewed: 29
Supplier: SeaSoft Computing
Price: £30.50

PageStream 2.2
Inexpensive page layout program with Postscript
Rating: 50%
Reviewed: 2,3
Supplier: Meridian
Price: £69.95

Pen Pal
Fun word processor with integral database
Rating: 70%
Reviewed: 6,9,25
Supplier: Gordon Harwood
Price: £49.95

Pepe's Garden
The 3 Rs
Rating: 70%
Reviewed: 10
Supplier: Prisma
Price: £25.99

Personal Fonts Maker 2
256 colour font construction utility from Cloanto
Rating: 70%
Reviewed: 36
Supplier: Meridian
Price: £59.95

Personal Paint 4.0
Latest version of Cloanto's DPaint rival
Rating: 75%
Reviewed: 37
Supplier: Meridian
Price: £59.95

Picture Book
The 3 Rs
Rating: 90%
Reviewed: 10
Supplier: Triple R Education
Price: £20

PowerBase 3.34
Simple flat-file database
Rating: 70%
Reviewed: 30
Supplier: Amivision
Price: £14.95

Powerwaves 3.1
Makes 3D wave based objects
Rating: 70%
Reviewed: 21
Supplier: Database Software
Price: £17.95

Pro Draw 3.0
Structured drawing compliment to Pro Page
Rating: 90%
Reviewed: 27
Supplier: Silica
Price: £132

Pro Page 4
Big, well-respected page layout from Gold Disk
Rating: 90%
Reviewed: 27
Supplier: Silica
Price: £199.95

Professional Calc
Major upgrade of Advantage with many more features
Rating: 90%
Reviewed: na
Supplier: Silica
Price: £150

Protext V6
Latest version of Arnor's power word processor
Rating: 80%
Reviewed: 35
Supplier: Arnor
Price: £99

Quarterback 6.0
Latest version of popular HD backup utility
Rating: 82%
Reviewed: 37
Supplier: Meridian
Price: £74.95

Quarterback Tools Deluxe
Collection of disk utilities
Rating: 90%
Reviewed: 31
Supplier: Meridian
Price: £129.95

Real 3D 2
Clever surface texture modelling in a class of its own.
Rating: 80%
Reviewed: 31
Supplier: Alternative Image
Price: £469

Resource
Disassembles binary to macro assembly language
Rating: 90%
Reviewed: 33
Supplier: Helios
Price: £130

Scala EE100
Semi-pro editing for LANC equipped gear
Rating: na
Reviewed: 36
Supplier: Scala UK
Price: £149

Scala MM300
Costly, all-singing, all-dancing video FX generator
Rating: 90%
Reviewed: 36
Supplier: Scala UK
Price: £329

Sculpt 4D
A genuine classic of ray-tracers.
Rating: 90%
Reviewed: 7
Supplier: Alternative Image
Price: £400

Smooth Talker
Video prompting system
Rating: 70%
Reviewed: 16
Supplier: Zen Computers
Price: £140

Spellbound
Writing for little ones
Rating: 70%
Reviewed: 6
Supplier: Lander Software
Price: £26

Spellicopter
Spelling
Rating: 70%
Reviewed: 6
Supplier: ESP Software
Price: £20

Studio
All-singing printer driver
Rating: 90%
Reviewed: 33
Supplier: JAM
Price: £49.95

Superbase Personal 2
Very powerful programmable relational database with forms
Rating: 70%
Reviewed: 9,12
Supplier: Oxxi
Price: £100

Superbase Pro 4
Very powerful programmable relational database with forms
Rating: 90%
Reviewed: 4,9
Supplier: Oxxi
Price: £400

SuperJam!
Music generation by computer
Rating: 70%
Reviewed: 15
Supplier: Blue Ribbon Sound
Price: £100

Surface Master
Another gribbly surface generator for Imagine
Rating: 70%
Reviewed: 14
Supplier: Alternative Image
Price: £28

Technosound Turbo 2
Sample editor
Rating: 70%
Reviewed: 30
Supplier: New Dimensions
Price: £39.99

Terraform
Edits landsape.DEM files for VistaPro
Rating: 70%
Reviewed: 26
Supplier: Meridian
Price: £34.99

The French Mistress
French language tutor for all
Rating: 70%
Reviewed: 4
Supplier: Kosmos
Price: £20

Touch Typist
Computer aided course in touch typing
Rating: 70%
Reviewed: 15
Supplier: Sector Software
Price: £14

TrapFAX
FAX software for high-speed modems
Rating: 80%
Reviewed: 36
Supplier: Blittersoft
Price: 74.95

Turbo Print Pro
Enhanced printing utility
Rating: 70%
Reviewed: 14,15
Supplier: Meridian
Price: £49.95

TypeSmith 2
Scalable font utility
Rating: 90%
Reviewed: 36
Supplier: Meridian
Price: £135

Upper Disk Tools
Disk recovery tools
Rating: 81%
Reviewed: 37
Supplier: Wheelbarrow Software
Price: 19.95

VistaPro
Real-world landscape generator
Rating: 90%
Reviewed: 7
Supplier: Meridian
Price: £100

VTClock
Video-type clock overlay for video use
Rating: 90%
Reviewed: 35
Supplier: Zen Computers
Price: £35.25

Wordworth 2 AGA
Improved version of Wordworth
Rating: 80%
Reviewed: 33
Supplier: Digita
Price: £129.95

Wordworth 3.0
Latest version of Digita's high-power word processor
Rating: 65%
Reviewed: 37
Supplier: Digita
Price: £149.95

Supplier's list

For information on the libraries supplying pulbic domain and shareware, check out our full listing on page 90.

Accolade 071 738 1391
ACL 0933 650677
Almathera 081 687 0040
Alternative Image 0533 440041
Amiga Centre Scotland 089 687583
Arnor 0733 68909
Blitter Soft 0908 220196
Calculus 0543 418666
Cloudhall 0604 231211
Commodore 0628 770088
Complex Computers 0706 224531
Coombe Valley 0626 779695
Digita 0395 270273
Electronic Arts 0753 549442
Entertaiment Int. 081 343 9143
ESP 0702 600557
Europress 0625 859333
Expressworks 0252 726255
Gajits 061 236 2515
Gasteiner 081 345 6000
GND 071 515 0100
Gordon Harwood 0773 836781
HiSoft 0525 718181
Indi Direct 0543 419999
Kosmos Software 0525 873942
Lander Software 041 357 1659
Lola Electronics 0858 880182
Marcam 0604 790466
MCM 081 963 0663
Meridian 081 543 3500
MicroIllusions 0480 496497
New Dimensions 0291 690933
Oki Printers 0753 819819
Omega Projects 0942 682206
Power Computing 0234 273000
Prisma Software 0244 362244
Real Time Associates 081 6567333
Rombo 0506 414631
Scala UK 0920 444294
SeaSoft Computing 0903 850378
Silica 081 309 1111
Siren Software 061 474 7572
Star 0494 471111
The Jumping Bean Company 0602 792838
Trilogic 0274 678062
Tripple 'R' Software 0742 780370
White Knight Technologies 0992 714539
Zen Computer Services 061 793 1931

AMIGA SHOPPER
Issue 40 – August 1994

Editor: Richard Baguley
Art Editor: Nick Aspell
Production Editor: Anna Grenstam
Technical Writer: Graeme Sandiford
Consultant Editors: Jeff Walker, Mark Smiddy
Contributors: Gary Whiteley, Wilf Rees
Dave Winder, Toby Simpson, R Shamms Mortier, John Kennedy, Cliff Ramshaw, Tim Tucker, Paul Overaa
Cover Image: *Paul Bryant of Foundation Imaging*
Photography: Stuart Whale
Ad Manager: Jackie Garford
Senior Sales Executive: Anne Green
Sales Executive: Diane Clarke
Ad Production Manager: Tracy O'Donnell
Ad Design: Lisa Withey
Production Technicians: Jon Moore, Mark Gover, Simon Windsor, Chris Stocker
Group Production Manager: Judith Middleton
Production Controller: Claire Thomas
Production Control Assistant: Megan Doole
Paper Controller: Fiona Deane
Admin Assistant: Suzannah Angelo-Sparling
Distribution: Sue Hartley
Publisher: Steve Carey
Joint Managing Director: Greg Ingham

Member of the Audit Bureau of Circulations
ABC Audited circulation
July – December 1993: 37,583

Printed by Southernprint Ltd, Poole, Dorset
ISSN 0961-7302 Printed in the UK
Circulation Manager: Jon Bickley
News Trade Distribution –
UK: Future Publishing 0225 442244
Worldwide: MMC Ltd 0483 211678

Editorial and Advertising: 30 Monmouth Street, Bath, Avon BA1 2BW
☎ 0225 442244 Fax: 0225 446019
E-mail: amshopper@cix.compulink.co.uk

Subscriptions: Future Publishing Ltd, FREEPOST(BS4900) Somerton, Somerset TA11 6BR. ☎ 0225 822510

Your guide to safer AMIGA Shopping

Getting confused in the alluring shopping jungle is easy. Amiga Shopper leads the way to a better buy.

Colourful adverts tempt you with amazing pieces of equipment and software for your Amiga. They are faster, bigger, better and you are just dying to get your hands on them. Your first step to avoid dishonest businesses (thankfully they are a small minority, but all it takes is one!) and ultimately disappointment on your behalf, is to read our Safe Shopping advice. Follow a few simple steps and the Amiga kit of your dreams will safely be yours.

BUYING IN PERSON

- Where possible, always test any software and hardware in the shop before taking it home, to make sure that everything works properly.
- Make sure you have all the necessary leads, manuals or other accessories you should have.
- Don't forget to keep your receipt.

BUYING BY PHONE

- Be as clear as you possibly can when stating what you want to buy and make absolutely sure you confirm all the technical details. Things to bear in mind are: version numbers, memory requirements, other hardware or software required, and compatibility with your Amiga (be sure you know which version of Kickstart you have).
- Check the price you are asked to pay, and make sure that it's the same as the price advertised.
- Check that what you are ordering is actually in stock.
- Check when and how the article will be delivered, and that any extra charges are as stated on the advert.
- Make a note of the date and the name of the person you are ordering from.

BUYING BY POST

- You must remember to clearly state exactly what you are buying, at what price (refer to the magazine, page and issue number where it's advertised) and give any relevant information about your system set-up that will reduce the risk of hiccups.
- Make sure you keep copies of all correspondence.

MAKING RETURNS

You are entitled to return a product if it fails to meet one of the following criteria:

1. The goods must be of 'merchantable quality.'
2. They must be "as described".
3. They must be fit for the purpose for which they were sold, or for the purpose you specified when ordering.

If they fail to satisfy any or all of the criteria, then you are entitled to:

- Return them for a refund.
- Receive compensation for part of the value.
- Get a replacement or free repair.
- When returning a product, ensure you have proof of purchase and that you return the item as soon as possible after receiving it. That's why it is important to check it thoroughly as soon as it is delivered.

GETTING REPAIRS

- Always check the conditions of the guarantee, and servicing and replacement policy.
- Always fill in and return warranty cards as soon as possible, and make sure that you are aware of all the conditions in the guarantee.

BUYING PD

- Even though PD software is relatively inexpensive, you should still apply the guidelines set out above, making sure that you confirm all orders as clearly as possible.
- Shopping around is still important when buying PD because different sources charge different prices for the same disks. There is no set pricing structure for disks, but bear in mind that PD houses are meant to be non-profit-making operations. AS

Buying by Mail – Ten Steps to Safety

When you're buying from any mail order company, it's worth following *Amiga Shopper's* useful guidelines to avoid confusion and disappointment:

1.) Before you send any money, ring the supplier to make sure the item you require is in stock. Ask questions about the company's policy on delivery and returns of faulty equipment. Make sure that there are no hidden costs such as postage and packaging. Find out when you can *realistically* expect to receive your goods.

2.) Always read the small print in adverts. This is normally where the unpleasant surprises are hidden

3.) Beware companies that do not include their address on their adverts. Also, avoid companies which do not answer or return your calls.

4.) By far the best method of payment is by credit card. If ordering goods of more than £100 in total value, remember that you are legally entitled to claim compensation from some credit companies if the retailer goes bust. Check your credit card company's policy carefully. You can also try to get extra insurance in advance.

5.) If you're not paying by credit card, pay by cheque. Never send cash, and avoid using postal orders.

6.) Keep records. If you are buying by credit card keep a note of the time of the order and ask for an order number. When ordering anything over the telephone, always double-check the price.

7.) When sending a cheque keep a note of the cheque number, the date and the exact value. Make sure you know the exact name of the mail order company.

8.) When you receive your goods, check them carefully. If anything is missing or faulty, contact the supplier immediately.

9.) Always order from the most recent issue of *Amiga Shopper*.

10.) If a problem does arise, contact the supplier in the first instance. Calmly and politely tell them your problem. Most problems turn out to be minor hitches or misunderstandings that can easily be resolved. If you think you have a genuine grievance, contact your local Trading Standards Officer. The number is in the phone book.

ADVERTISERS INDEX

WIN A WINDOW TO THE WORLD

Your chance to win a US Robotics V32 Terbo Modem and free* Internet access for a year!

This month we have a real stonker of a competition. Not only are we giving away a brand new shiny V.32 terbo fax/modem (donated by those nice people at US Robotics ☎ 0753 811180), but we also have free* Internet access (thanks to those nice people at Demon Internet Services ☎ 081 343 3881) for a year for five lucky winners!

If all this talk of the Internet is gibberish to you, perhaps you'd better read our in-depth feature on the Internet, starting on page 10. This feature also has the answers to the questions hidden away, so why not nip back there before entering this month's excellent competition?

First Prize — **A US Robotics V.32 Terbo modem and free* Internet access for a year.**

Plus four prizes of Free* Internet access for a year.

To win, just write your answers to the questions at the bottom of the page on the back of a postcard and send it to:

More Modems, Madam!
Amiga Shopper 30 Monmouth Street,
Bath, Avon BA1 2BW

Alternatively, you can E-Mail your entries to :
COMPETITION@AMSHOP.DEMON.CO.UK

Please state on the back if you don't want your name and address included on a mailing list. We will pick out five winners from all of the correct entries received on or before the closing date of Friday 12 August. All the usual rules apply. Anybody engaged in the building of the by-pass on Little Solsbury Hill is automatically disqualified. Only one entry per household is allowed. May the Goddess be with you in your endeavours.

THE QUESTIONS

1. What does DARPA stand for?
2. What is the program used to search for files across the Internet called?
3. What is the name of the Amiga World Wide Web browsing software?

* Except for the phone bill – that's your problem.

THEY ARE THE CHAMPIONS

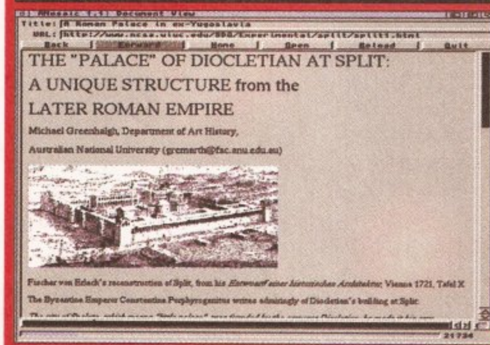
We had an extremely good response to our Brilliance competition from issue 38. So good, in fact, that Graeme has had to go and spend two weeks in Turkey to recover from the struggle of having to sort the post every morning. Anyway, our jolly nice Production Editor Anna has reached delicately into the hat and yanked out ten winners, so the following lucky people will be receiving a copy of the truly boffo paint program Brilliance 2 shortly.

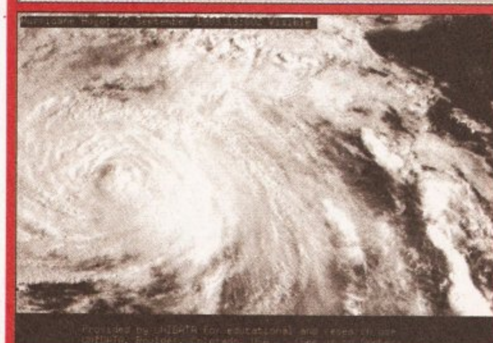
- Murray Hutton from New Zealand
- Mr J Warner from Newport Pagnell
- Robert Sowden from Truro
- Dave McFarlane from Leicester
- John Bell from Ellesmere Port
- Mrs E Adams from Swanley, Kent
- Steve Carter from Chelmsford
- Neil Curnow from St Ives
- Mr A Marshall from Eastbourne
- Angus Ellis from Weybridge

Congratulations to you lot! You should be receiving your prizes within the next few weeks.

A taster of just a few of the things you can find out there on the Internet

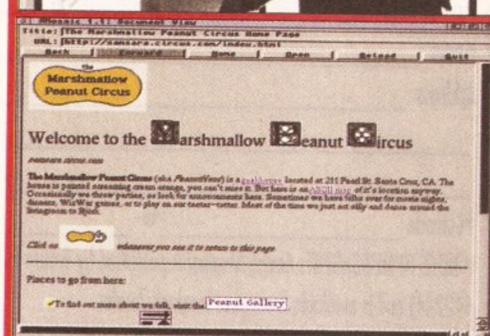


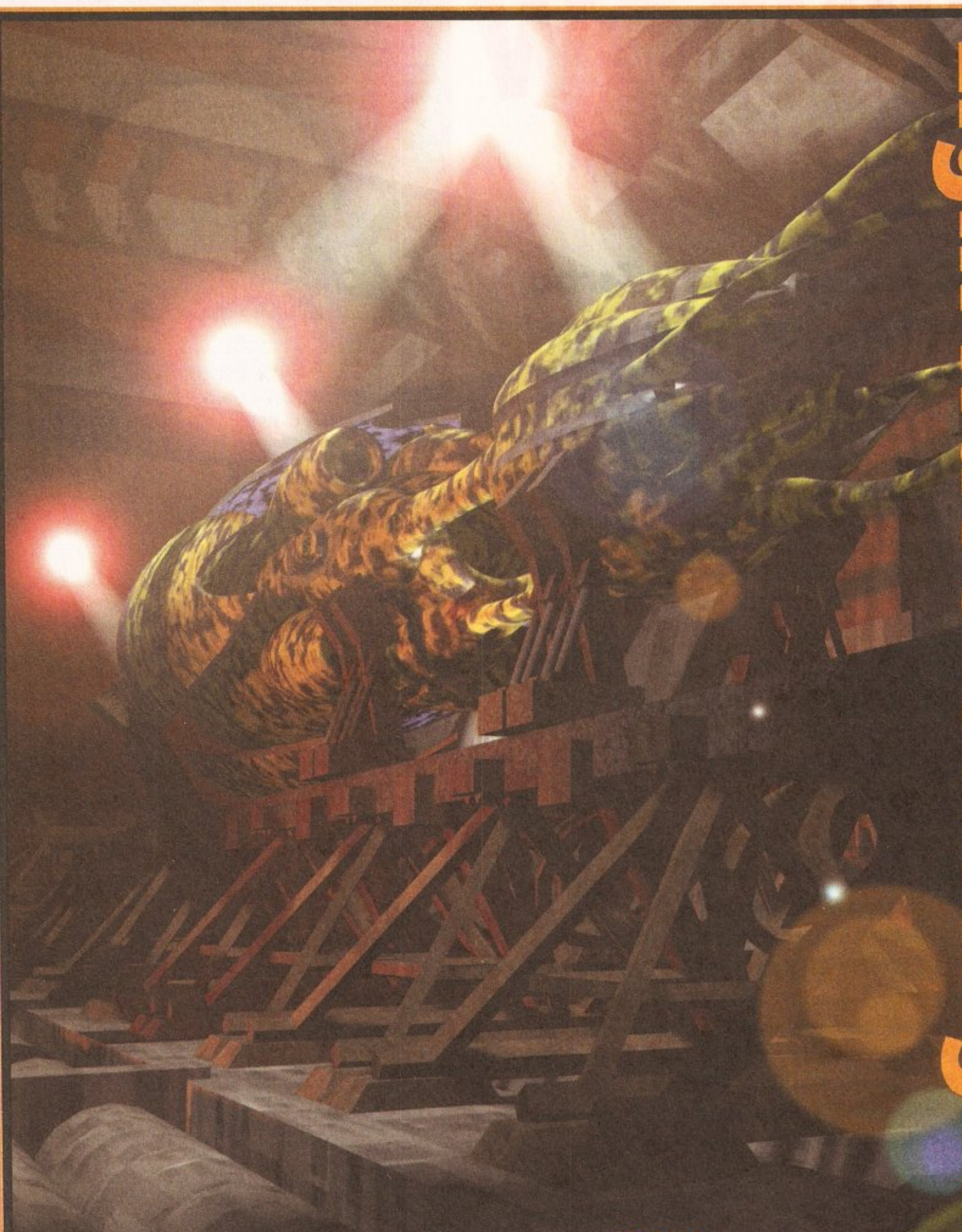












LightWave & Imagine 3

Next month's Amiga Shopper will bring you the full gen on both of these stunning 3D packages, including opinions and tips from professional animators.

Plus V-Fast modems and assembly language programming. On sale Tuesday 2 August for £2.50. Watch the skies!

DEAR NEWSAGENT, Please reserve/deliver me a copy of *Amiga Shopper* every month, beginning with the August issue, which goes on sale on Tuesday 5 July.

Name ____________________

Address ____________________

____

____

Postcode ____________ ☎ ____________

• NOTE TO NEWSAGENT: *Amiga Shopper* is published by Future Publishing (0225 442244) and is available from your local wholesaler.

BE SURE TO AVOID DISAPPOINTMENT – RESERVE YOUR FAVOURITE MAGAZINE AT YOUR LOCAL NEWSAGENT NOW!

• PS Oh, and if you do have any problems getting hold of your favourite Amiga mag, call Kate Elston on 0225 442244 and she'll help you out.

AT-A-GLANCE GUIDE

To help you find what you want quickly, here is a cross-referenced list of everything covered in this month's *Amiga Shopper*. You'll find a detailed index to the problem-solving *Amiga Answers* section on page 41. The page numbers given are for the first page of the article in which the subject is mentioned.

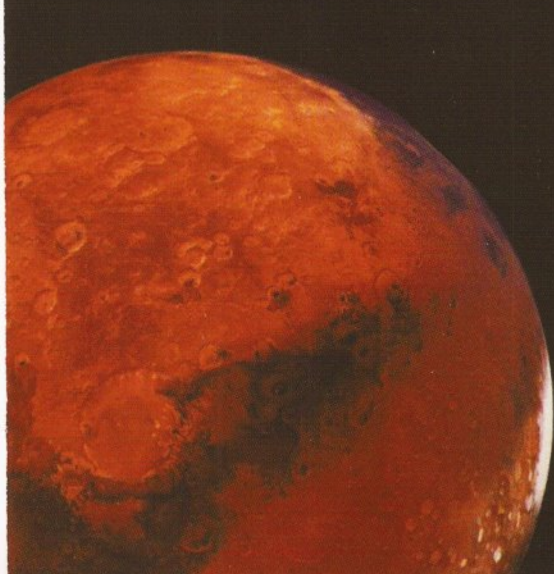
Are there any products or subjects you'd like us to take a look at? Well, just drop a line to: *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Page 10 There has been a lot said about the Internet recently, with several TV programs discussing it and the American Government setting up the so-called "Information Superhighway". Let us show you what it's all about and what exactly it means for you, the Amiga user.

Page 20 an in depth review of the piece of video hardware that everybody is talking about – the Personal Animation Recorder

Page 26 We take a first look at Imagine 3 and Lightwave 3D standalone

Page 42 Plus 10 pages of Amiga problems solved by our resident team of Amiga experts



08
9 770961 730056